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1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--USE OF EXPANDING PLUGGING CEMENT IN THE WELLS OF UNDERGROUND GAS STORAGE TANKS -U-

AUTHOR-(04)-DANYUSHEVSKIY, V.S., SNEGIREV, N.P., ROZOV, V.N., CHAO, P.H.

COUNTRY OF INFO--USSR

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DATE PUBLISHED-------70

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CIRC ACCESSION NO--AP0122270

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDN. OF GROUND UNSLAKED LIME IN AN UNSTATED AMT. TO THE TITLE CEMENTS GREATLY IMPROVED THEIR EXPANDING POWER, RESISTANCE TO PENETRATION OF GAS AND WATER, AND THEIR ADHESION TO STEEL AND STONE. SILICA IS ALSO ADDED TO COMBINE WITH THE CA(OH) SUB2 FORMED DURING DRYING. PRACTICAL TESTS IN STORAGE AREAS AT 100-168 ATM. GAVE GOOD RESULTS.

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USSR

UDC 616.61-088.64-036.11-085.835.3

KATS, B. G., and ROZOV, Ye. Ye.

"The Use of Hyperbaric Oxygenation in the Treatment of Patients With Acute Renal Insufficiency"

Moscow, Urologiya i Nefrologiya, No 3, May-Jun 71, pp 55-56

Abstract: Case histories are presented of two patients who suffered from acute renal insufficiency and were successfully treated with hyperbaric oxygenation. Patient K., age 22, drank about 400 ml of ethylene glycol and, on the next morning, was admitted to the hospital in a very bad general condition. He did not respond to conventional treatment, his condition deteriorated throughout the day, and bladder catheterization yielded a total of only 350 ml of opaque, very acid urine containing protein. He was placed in the hyperbaric chamber where he breathed oxygen under 2 atm for 1 hour. Soon, cyanosis disappeared and his blood pressure, heart rate and respiratory rate improved considerably. Within approximately half an hour of breathing oxygen under pressure, he regained consciousness, asked for a glass of water, and began to pass urine spontaneously. His condition kept improving throughout the night, and on the following day he spent another hour in the pressure chamber. Since his general condition was satisfactory, he was transferred to the Oblast Hospital

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KATS, B. G., and ROZOV, Ye. Ye., Urologiya i Nefrologiya, No 3, May-Jun 71, pp 55-56

where he received conventional treatment, recovered completely within 20 days, and was discharged. Patient G. was a 32-year old woman who developed renal insufficiency after surgery (obstructive jaundice with complications, including chronic nephritis). Though she was in coma when first placed into the hyperbaric chamber, her condition soon began to improve. After the second session, her spontaneous urine output reached about 1.6 liters per day, and after the third session her general condition was so good that the treatment was discontinued. She recovered within a month and was discharged from the hospital.

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USSR

UDC 616.216-073.75-057:626.02

KHEIFETS-TETEL'BAUM, B. A. and ROZOV, Ye. Ye. (Tallin)

"Change of the Roentgenographic Picture of the Nasal Accessory Sinuses in Divers During Work"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1972, pp 48-51

Abstract: It is difficult to overevaluate the importance of the condition of the nasal accessory sinuses in divers. However, roentgenological examinations of the sinuses are not always conducted during the selection of these specialists. At the same time, some authors point out the rather high percentage of "symptomless" diseases of the nasal accessory sinuses found in different contingents of people during roentgenographic and fluorographic examinations -- up to 35 percent and even up to 77 percent (I. L. Litmanov and coauthors; Ye. B. Vishnevskiy; N. S. Chesnokov and others). As a rule, these people do not complain during ear, nose and throat examinations and deviations from the norm are not detected during endoscopic examinations, in most cases.

In 1964, we made roentgenographic examinations of the condition of the nasal accessory sinuses of 42 divers who had worked in this specialty from 2 to 4 years. They had all passed, preliminarily, the medical-diving commission and were certified fit for diving operations. No complaints were registered at

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KHEIFETS-TETEL'BAUM, B. A. and ROZOV, Ye. Ye., Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1972, pp 48-51

ear, nose and throat examinations. These divers registered no kind of complaints after dives at various levels -- from 3-10 meters up to deep dives (within limits). At the same time, ten of them manifested different changes of the roentgenographic picture of the nasal accessory sinuses which some authors considered to be either catarrhal sinusitis or sinusitus (I. L. Litmanov and coauthors; Ye. M. Kagan and A. I. Bukhman; N. S. Chesnokov and others). Naturally, we faced the problem concerning the connection between these changes and the work of the persons who were examined. It was necessary, in addition, to evaluate these changes and to explain whether they are of a pathological nature or may be considered as a physiological reaction of the mucus membrane of the sinuses to some unfavorable effects of a dive (including deep water dives).

For this purpose, we examined, in 1964-1970, 72 divers and deep-sea divers, actively engaged in diving operations at different depths both in shallow water equipment and in deep water equipment with the use of special gas mixtures. Since participation in diving operations involves systematic sea voyages, we, in order to exclude (or to show) the effect of maritime conditions on the condition of the upper respiratory tract, examined a group of

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KHEIFETS-TETEL'BAUM, B. A. and ROZOV, Ye. Ye., Gigiyena Truda i Professional'nyye Zabolevaniya, No 7, 1972, pp 48-51

non-diving specialists including 40 persons who worked in maintenance during diving operations and systematically went to sea with the divers. We examined both groups twice -- before the beginning of their professional work (immediately after coming aboard ship) and after 2-3 years of service aboard ship according to their specialties. This permitted us to explain the effect of professional factors on the condition of the nasal accessory sinuses in these persons.

All of those examined before roentgenography of the nasal accessory sinuses underwent ear, nose and throad examinations and made no complaints. Of 72 divers undergoing roentgenography before the beginning of professional activity, changes in the sinuses were detected in five (7 percent) and they were associated with a decrease of pneumatization. Three of these persons had participated actively in aqualung diving before working as divers. In the group of persons of non-diving specialty, before the beginning of service, we noted changes in seven persons (14.5 percent) which agrees with data from the literature. During examination of these same persons after 2-3 years, attention is drawn to the significant increase of the number of roentgenographic changes in the nasal accessory sinuses among divers. At the same time, the number of changes

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KHEIFETS-TETEL'BAUM, B. A. and ROZOV, Ye. Ye., Gigiyena Truda i Professional'-nyye Zabolevaniya, No 7, 1972, pp 48-51

detected in the sinuses among persons in non-diving specialties were not changed significantly. These data indicate an association of changes in the nasal accessory sinuses with the work of the divers. All of these persons, as before, did not complain after a stay under high pressures, they displayed barofunction. Diagnostic probes made by us for eight divers with reduced pneumatization of the sinuses did not reveal any foreign matter. At the same time, analogous probes in persons of a non-diving specialty (eight persons) led to the detection of purulent matter in four persons and serous matter in two persons and only two of the persons examined did not reveal foreign matter.

Dives are accompanied by the constant effects of some unfavorable factors on the organism, the most significant of which is high pressure and pressure drops, high partial pressure of oxygen, nitrogen, helium, low water temperature and inhaled gas mixtures. The mucus membrane of the upper respiratory tract (including the nasal accessory sinuses) is subjected to all of these unfavorable factors. The mechanical stimulation of the mucus membrane of the sinuses by air, oxygen and gas mixtures, entering the sinuses under increased pressure and leaving them after decrease of pressure are of great importance.

We are inclined to assume that the indicated changes in the nasal accessory sinuses in divers are not of a pathological nature but are response reactions

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KHEIFETS-TETEL'BAUM, B. A. and ROZOV, Ye. Ye., Gigiyena Truda i Professional'-nyye Zabolevaniya, No 7, 1972, pp 48-51

of the mucous membrane to the effect of the factors enumerated. This opinion is supported by the absence of complaints of sensations of illness during dives (including deep sea dives) and also the absence of foreign matter during diagnostic punctures and the association of the changes observed with the work of the persons who were examined.

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Information Theory & Pattern Recognition

USSR

UDC 389.0:62-501.2

AVERBUKH, G. YU., KATASHKOV, E. S., and ROZOV, YU. L.

"Determination of Minimum Interrogation Rate in Analog-Digital Conversion of Random Signals"

Moscow, Izmeritel'naya Tekhnika, No 3, Mar 73, pp 15-17

Abstract: The article considers the problem of selecting the quantization interval in the generation of random processes on the basis of statistical characteristics determined from a limited sample length. Results are obtained relating the quantization step to the length of a processed sample with a given reproduction fidelity. The results show that in problems of random signal generation from digital data, the accuracy of the statistical quick analysis can be comparatively low, and the samples selected to be processed in a number of practical cases should have a length of no more than 10-20 correlation intervals.

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USSR

UDC 631.291.27

AVERBUKH, G. YU., ROZOV, YU. L., CHELPANOV, I. B., Leningrad

"Error in Measuring the Maximum Values of a Stationary Random Process by Discrete Methods"

Novosibirsk, Avtometriya, No 2, 1973, pp 35-42

Abstract: A study was made of the problem of estimating the error in determining the maximum values of a continuous random process by digital data. The analytical expressions were obtained for determining the amplitude and phase errors by means of which the maximum possible recording interval can be found with respect to the given admissible error in recording the extremal values. Only one simplest algorithm is considered: The values of the process which are greater than two adjacent ones are taken as the estimate of the magnitude and position of the local extremum. The amplitude error in determining the maximum values of the investigated signals is also considered. The results of the analysis indicates the possibility of using digital recording techniques to determine the maximum values of the investigated processes. The formulas which are derived permit determination of the admissible digitalization interval by the given admissible error in reproducing the maximum values.

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USSR

UDC 541.183.5:546.79

SHEYDINA, L. D., ROZOVSKAYA, N. G., and KOVARSKAYA, Ye. N.

"A Method of Studying Radioelement Sorption"

Leningrad, Radiokhimiya, Vol XIII, No 2, 1971, pp 180-184

Abstract: A study was made of the methods of investigating the sorption of radioelements. The sorption of $Pu^{(IV)}$ on glass as a function of the pH of a solution (freshly prepared) with a plutonium concentration of $4 \cdot 10^{-8}$M, the sorption of $Pu^{(IV)}$ on glass as a function of the pH of a solution made of aged solutions with a plutonium concentration of $4 \cdot 10^{-8}$M and the sorption of $Pu^{(IV)}$ on glass as a function of the pH of a solution made of freshly prepared solutions with a plutonium concentration of $4 \cdot 10^{-8}$M are plotted. The method of sorption from aged solutions is described, and it is found to be applicable when studying the sorption of radioelements when investigating their state in solution.

The results obtained by various authors are discussed, and an experiment is described in which the causes of contradictory data of various authors

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SHEYDINA, L. D., et al., Radiokhimiya, Vol XIII, No 2, 1971, pp 180-184

obtained in the study of the sorption of Pu(IV) under various experimental conditions are established. The sorption mechanism is discussed in detail and reasons are given for the various shapes of the curves. Both experimental errors and impurities are given as causes for these differences.

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USSR

UDC 519.217

ROZOVSKIY, A. L.

"Output Stream in a System with Infinite Number of Servicing Devices"

Materialy Seminara po Kibernet. AN Mold, SSR, Mold. Territor. Gruppa Nats. Kom. SSSR po Avtomat. Upr. [Materials of a Seminar on Cybernetics, Academy of Sciences, Moldavian SSR, Moldavian Territorial Group of National Committee of USSR on Automatic Control] No 23-24, 1970, pp 59-64 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V45 by the author).

Translation: A system is studied with an infinite number of servicing devices, each of which operates according to an arbitrary rule, identical for all requests. The leading function of the output stream is determined on the assumption that the servicing is distributed exponentially. It is demonstrated that as $t \to \infty$, the stream probably approaches a simple stream corresponding with the input flow.

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USSR

UDC 536.46

IVANOV, B. A., MELIKHOV, A. S., ROZOVSKIY, A. S., Balashikha

"Combustion of Materials in Liquid Oxygen"

Novosibirsk, Fizika goreniya i vzryva, Vol 8, No 4, 1972, pp 593-595

Abstract: Solid nonmetallic materials (plastics, fiberglass, and so on) are widely used in the oxygen industry, but in contact with liquid oxygen they form heterogeneous systems capable of ignition from various random sources and intense combustion. A study was made to measure the apparent combustion rate of standard representatives of the nonmetallic materials -- polytetrafluoroethylene, polymethylmethacrilate, textoline and KAST-V fiberglass -- as a function of the specimen diameter, pressure and temperature of the liquid oxygen. The combustion rates of all the materials increase with an increase in pressure almost by a linear law. The temperature of the liquid oxygen has a noticeable effect on the combustion rate. The linear dependence of the combustion rate on pressure is retained for all the investigated diameters, but the slopes of the curves decrease with an increase in diameter. A photograph of a burning specimen of textolite in liquid oxygen under a pressure of 1 kg/cm^2 shows that the combustion takes place in a gas bubble formed during evaporation of the liquid oxygen. Thus, some of the laws of combustion of solid nonmetallic materials in gaseous oxygen will also apply in liquid oxygen. The increased

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IVANOV, B. A., et al., Fizika goreniya i vzryva, Vol 8, No 4, 1972, pp 593-595

combustion rate of polytetrafluoroethylene in liquid oxygen is connected with intensification of the mass exchange processes as a result of boiling and evaporation of the liquid oxygen at the liquid-gas bubble interface and also pulsations of the bubble walls.

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UDC: 519.2

ROZOVSKIY, B. L.

"Concerning the Ito-Wentzel Formula"

Vestn. Mosk. un-ta. Mat., mekh. (Moscow University Herald. Mathematics, Mechanics), 1973, No 1, pp 26-32 (from RZh-Kibernetika, No 5, May 73, abstract No 5V90 by the author)

Translation: Let there be given the probability space (Ω, F, P), and let $(G_t)_{t\in[0,1]}$ be a family of extensible σ-algebras, $G_t \subseteq F$ and $(w_t),\ t\in[0,1]$ be a standard Wiener process matched with $(G_t)_{t\in[0,1]}$. The principal result of the work is the following theorem.

Theorem 1. Let $F(t, y, \omega)$ be a P-almost certainly continuous function which is doubly continuously differentiable with respect to y. The function $F(t, y, \omega)$ is measurable over the set of variables, is matched with $(G_t)_{t\in[0,1]}$ and allows the stochastic differential

$$dF(t, y, \omega) = H(t, y, \omega)\, dw_t + f(t, y, \omega)\, dt$$

where $H(t, y, \omega)$ is a P-almost certainly continuous function which is continuously differentiable with respect to y, and $f(t, y, \omega)$ is P-almost

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ROZOVSKIY, B. L., Vestn. Mosk. un-ta. Mat., mekh., 1973, No 1, pp 26-32

certainly continuous. Furthermore let $y=\{y_t,\ t\in[0,1]\}$ be a solution of the equation

$$dy_t = A(t, y_t, \omega)\, dw_t + B(t, y_t, \omega)\, dt,\quad y_0 = y_0(\omega)$$

which is P-almost certainly continuous with respect to t. Then the formula

$$dF(t, y_t, \omega) = H(t, y_t, \omega)\, dw_t + f(t, y_t, \omega)\, dt +$$

$$+\left(\frac{\partial}{\partial y} F(t, y, \omega)|_{y=y_t}\right) dy_t + \frac{1}{2}\left(\frac{\partial^2}{\partial y^2} F(t, y, \omega)|_{y=y_t}\right) A^2(t, y_t, \omega)\, dt + \left(\frac{\partial}{\partial y} H(t, y, \omega)|_{y=y_t}\right) A(t, y_t, \omega)\, dt$$

is valid. This theorem represents somewhat of a generalization and modification of one of the statements contained in a paper by A. D. Wentzel (RZhMat, 1966, 1V59).

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USSR

ROZOVSKIY, B. L., SHIRYAYEV, A. N.

"On Infinite Systems of Stochastic Differential Equations Arising in the Theory of Optimal Nonlinear Filtering"

Moscow, Teoriya Veroyatnostey i yeye Primeneniya, Vol. 17, No. 2, Apr/May/Jun 72, pp 228-237

Abstract: The existence and uniqueness of the solution of the following system of stochastic differential equations are investigated:

$$dx_i(t) = \sum_{j=1}^{\infty} \lambda_{ji}(t)\, x_j(t)\, dt + x_i(t)\left[A(t, \xi_t, i) - \sum_{j=1}^{\infty} A(j, \xi_t, t)\, x_j(t)\right] \times$$

$$\times \left[d\xi_t - \sum_{j=1}^{\infty} A(j, \xi_t, t)\, x_j(t)\, dt\right] \qquad (1)$$

with initial conditions $x_i(0) = \pi_i(0) = \mathrm{P}(\theta_0 = i)$, $\sum_{i=1}^{\infty} x_i(0) = 1$.

This equation arises in problems of optimal nonlinear filtering. The following

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ROZOVSKIY, B. L., SHIRYAYEV, A. N., Teoriya Veroyatnostey i yeye Primeneniya, Vol. 17, No. 2, Apr/May/Jun 72, pp 228-237

theorem is proved: if $x_i(0) = P(\theta_0 = i)$, the system of equations (1) in class M has a unique solution. This solution is a probability solution: i.e., $x_i(t) \geqslant 0, \sum_{i=1}^{\infty} x_i(t) = 1$. It follows from this theorem that the process $\pi = (\pi_i(t),$ $i = 1, 2, \ldots; 0 \leq t \leq 1)$ made up of a posteriori probabilities $\pi_i(t)$ is a unique solution in class M satisfying the initial condition $x_i(0) = \pi_i(0) = P(\theta_{0=i})$. This theorem is proved by studying problems of the existence and uniqueness of an infinite system of linear stochastic equations, and it is shown that the initial problem for the system (1) can be reduced to a consideration of these systems of linear stochastic differential equations.

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USSR

ROZOVSKIY, L. V.

"Asymptotic Expansions of Probabilistic Functions of Sums Independent Random Vectors"

Lit. mat. sb. [Lithuanian Mathematics Collection], 1973, 13, No 1, pp 165-171 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V22 by the author)

Translation: Estimates of the residual term in the asymptotic expansion of the probabilistic function $P_n(A)$ of the sum of independent, identically distributed random vectors are studied. The estimates are uneven. They depend on $\rho(A)$--the shortest distance between boundary A and the origin of the coordinates. Theorems produced in this work are genearlizations of certain one-dimensional results of L. V. Osipov.

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UDC 539.67

USSR

ROZOVSKIY, M. I., POTURAYEV, V. N., KRUSH, I. I., and SHAKALOVA, O. I.

"On the Influence of Relaxation Characteristics on Deformation Properties of Metals"

Sb. "Vnutrenneye treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 120-123

Abstract: The use of weakly singular integral operators for the description of mechanical relaxation of metals at high temperature is considered, The physical meaning of operator parameters taking into account behavioral features of polycrystal materials is elucidated. An integro-operating equation for average stresses in a sample with inhomogeneous structure is obtained. 1 table, 7 references.

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USSR

UDC 678:539.376

GLUSHKO, V. T., ROZOVSKYY, M. I., and SHAKALOVA, O. I., Institute of Geotechnical Mechanics, Academy of Sciences Ukrainian SSR, Dnepropetrovsk Mining Institute

"Study of Plasticity Zone With Strengthening Around a Hole Under Creep"

Kiev, Dopovidi Akademiyi Nauk Ukrayins'koyi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 11, Nov 70, pp 1001-1004

Abstract: The article considers an unbounded plane which exists under plane strain, weakened by a round hole, along whose contour a normal force p is applied, and at infinity the stresses $\sigma_r^{(\infty)}$ = $\sigma_\theta^{(\infty)}$ = q are given. Under the action of a system of external forces a plastic zone arises around the hole, completely encompassing the hole. This zone varies with time as a result of the rheological properties of the material. The problem is to find the radius of the plasticity zone. The relationship between

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USSR

GLUSHKO, V. T., et al., Dopovidi Akademiyi Nauk Ukrayins'koyi RSR, Seriya A -- Fizyko-Tekhnichni ta Matematychni Nauky, No 11, Nov 70, pp 1001-1004

stress and strain in the plastic zone is described by integro-operator equations, the corresponding representation of A. YU. ISHLINSKIY and A. A. IL'YUSHIN for plane elasticoplastic strain with linear strengthening. A nonlinear integral equation in operator form is obtained to determine the law of the time variation of the radius of the plasticity zone with strengthening. The solution of this equation is found by the method of successive approximations. Inequalities limiting the exact solution are established.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

Acc. Nr: AP0045581 R Ref. Code: UR 0463

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, Nr 1, pp 144-151

THE SYNTHESIS OF RNA ON RAT LIVER MITOCHONDRIAL DNA BY RNAPOLYMERASE FROM *E. COLI*

Shmerling, Zh. G.; Borisova, N. I., Rozovskiy, Ya. M.

Institute of Atomic Energy, USSR, Moscow, and Institute of Crystallography, Academy of Sciences, USSR, Moscow

Mitochondrial DNA possesses template activity in the cell-free RNA-polymerase system from *E. coli*. The character of synthesized RNA depends on the template structure as was shown also in the case of viral and bacterial DNA templates. When the intact native mitochondrial DNA is used, the synthesis is assymetric, i. e. only one of DNA strands is read. Denaturation or fragmentation of DNA to the molecular weight 300 000—400 000 results in the loss of the strand specificity of the RNA synthesis: in these cases both DNA strands are read. The ability of RNA-polymerase to recognize starting points of transcription on the phylogenetically non-related templates suggests the identity of properties of DNA-initiation sites in all living creatures.

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UNCLASSIFIED PROCESSING DATE--20NOV70

1/3 014

TITLE--COMPLEXING OF 2,2,THIAZOLYLAZO,1,8,DIHYDROXY,3,6, NAPHTHALENEDISULFONIC ACID DERIVATIVES WITH METAL IONS -U-

AUTHOR-(04)-SAVVIN, S.B., ROZOVSKIY, YU.G., PROPISTSOVA, R.F., LIKHONINA, YE.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 423-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMINE, THIAZOLE, ALUMINUM COMPLEX, THORIUM COMPOUND, GALLIUM COMPOUND, ZIRCONIUM COMPLEX, NAPHTHALENE, SULFONIC ACID, POTENTIOMETRIC TITRATION, ANALYTIC CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0075/70/025/003/0423/0429

PROXY REEL/FRAME--2000/2092

CIRC ACCESSION NO--AP0125678

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

UNCLASSIFIED PROCESSING DATE--20NOV70

2/3 014
CIRC ACCESSION NO--AP0125678
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NEW REAGENTS BASED ON VARIOUS DERIVS. OF 2,AMINOTHIAZOLE AND CHROMOTROPIC ACID WERE SYNTHESIZED AND THEIR COMPLEX FORMATION WITH TH, ZR, GA, AND AL WAS STUDIED. THE REAGENTS ARE RED POWDERS, IN THEIR H FORM AND WELL SOL. IN H SUB2 O, HCONME SUB2, AND MEOH. AQ. SOLNS. OF THE REAGENTS ARE NOT STABLE. THE INTENSITY AND COLOR OF THE REAGENTS DEPENDS ON THE ACIDITY OF THE MEDIUM. THEY ARE BLUE GREEN COLORED IN A CONCD. H SUB2 SO SUB4, YELLOW IN 1-10N HCL, VIOLET IN THE PH RANGE 1-5, RED CRIMSON IN THE PH RANGE 7-12, AND BLUE IN 10PERCENT KOH. THE PREPN. AND BEHAVIOR OF 4,5,DIMETHYL,2, THIAZOLYLAZOCHROMOTROPIC ACID (I) IS DESCRIBED IN DETAIL. I CAN BE REPRESENTED AS A 4 BASIC ACID. THE 1ST EQUIL. POINT ON THE POTENTIOMETRIC TITRN. CURVE REPRESENTS THE NEUTRALIZATION OF 2 SULFO GROUPS, THE 2ND POINT THE TITRN. OF THE 1ST OH GROUP OF THE NAPHTHALENE NUCLEUS, THE DISSOCN. OF THE 2ND OH GROUP TAKES IN THE ALK. REGION. IN THE ACID REGION I FORMS 2 PROTONIZED FORMS, AT PH IS SMALLER THAN 1 A YELLOW THIAZOLYL CATION WITH MAX. ABSORBANCE AT 480 NM AND IN CONCD. H SUB2 SO SUB4 A 2ND PROTONIZED FORM WITH MAX. ABSORBANCE AT 640 MU M. I REACTS WITH SEVERAL ELEMENTS, GIVING VERY CONTRASTING COLORS WITH AL, ZR, TH, AND GA. I FORMS WITH AL 2 DIFFERENT COMPLEXES. IN AQ. SOLNS. AT PH 3-4 THERE IS A BLUE COMPLEX WITH MAX. ABSORBANCE AT 590 NM AND THE 2ND COMPLEX IS FORMED AT PH 1-2.5 REGION. THIS COMPLEX IS BLUE GREEN AND HAS A HIGH MOLAR ABSORPTIVITY. IN A AQ. ALC. SOLN. ONLY THE 2ND COMPLEX FORMS WITH MAX. ABSORBANCE 630 NM. TEMP. AND ORDER OF ADDN. DO NOT AFFECT THE YIELD OF THE COLORED COMPLEX. AL AND I REACT IN A 1:1 MOLAR RATIO.

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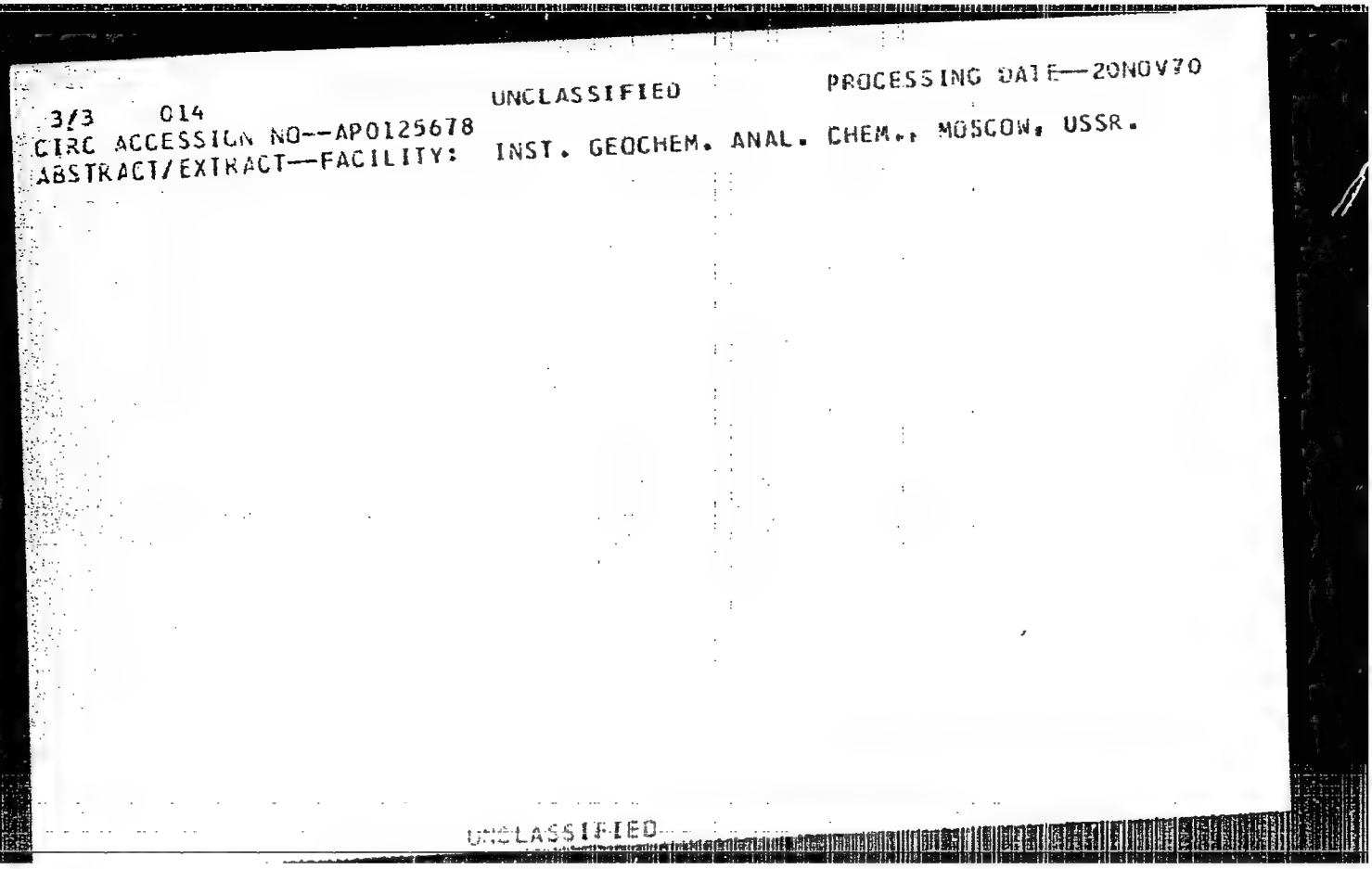

UNCLASSIFIED PROCESSING DATE--20NOV70

3/3 014

CIRC ACCESSION NO--AP0125678

ABSTRACT/EXTRACT--FACILITY: INST. GEOCHEM. ANAL. CHEM., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

1/2 009 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--NUCLEOPHILIC SUBSTITUTION REACTIONS IN QUATERNARY PHENAZINIUM SALTS -U-

AUTHOR-(03)-RUDENKO, V.N., ILCHENKO, A.YA., ROZUM, YU.S.

COUNTRY OF INFO--USSR

SOURCE--DOPOV. AKAD. NAUK UKR. RSR, SER. B 1970, 32(2), 159-63

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--EXCHANGE REACTION, METHYLENE, BROMINATED ORGANIC COMPOUND, KETONE, AMINE, HETEROCYCLIC NITROGEN COMPOUND, BENZENE DERIVATIVE, ORGANIC AZINE COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1137 STEP NO--UR/0442/70/032/002/0159/0163

CIRC ACCESSION NO--AT0134822
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 009

CIRC ACCESSION NO--AT0134822

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. QUATERNARY PHENAZINIUM SLATS WERE CONDENSED WITH COMPDS. CONTG. ACTIVE METHYLENE GROUPS, WITH BROMO KETONES, AND WITH AMINES. THUS, I WAS CONDENSED WITH (XY)CH SUB2, WHERE THE METHYLENE GROUP IS ACTIVATED BY 2 ELECTRONEG. GROUPS, BY ADDING THE COMPD. AND NAOME TO I (ALL 3 REAGENTS AS ALC. SOLNS.) AT ROOM TEMP. AND THE PPTD. II RECRYSTD. FROM MEOH. THE FOLLOWING II WERE PREPD. (X, Y, M.P., AND PERCENT YIELD GIVEN): ETCO SUB2, ETCO SUB2, 210DEGREES, 57; AC, AC, ETCO SUB2, 172-4DEGREES, 38; CN, ETCO SUB2, 245DEGREES, 56; AC, AC, LARGER THAN 300DEGREES, 50; ETCO, H, 153-5DEGREES, 57; AND BZ, H, 222DEGREES, 60. CONDENSATION OF I WITH BRCH SUB2 COR WAS CARRIED OUT UNDER SIMILAR CONDITIONS, CRYSTG. THE PRODUCT FROM CHCL SUB3. CONDENSATION OF 1,PHENYL,5,METHYLPHENAZINIUM SALTS WITH (XY)CH SUB2 GAVE THE FOLLOWING III (X, Y, M.P., AND PERCENT YIELD GIVEN): CO SUB2 ET, CO SUB2 ET, 174DEGREES, 70; AC, CO SUB2 ET, 153-5DEGREES, 80; CN, CO SUB2 ET, 250DEGREES, 80; AC, AC, 140DEGREES, 65; AND (XY EQUALS) 1,METHYL,5,OXO,2,THIOTHIAZOLIDIN,4,YLIDENE, 230DEGREES, 50. QUATERNARY 3,METHOXY,PHENAZINIUM SALTS (IV) WERE OBTAINED BY TREATING PHENAZIN,3,ONE WITH ME SUB2 SO SUB4. CONDENSATION OF IV WITH (XY)CH SUB2 GAVE THE FOLLOWING V (R, R PRIME, X, Y, M.P., AND PERCENT YIELD GIVEN): OME, R EQUALS ET, CO SUB2 ET, CO SUB2 ET, 115DEGREES, 46; OME, ET, CH, CO SUB2 ET, 240DEGREES, 50; MORPHOLINO, ME, CO SUB2 ET, CO SUB2 ET, 179DEGREES, 40; AND MORPHOLINO, ME, CN, CO SUB2 ET, LARGER THAN 300DEGREES, 40. FACILITY: INST. ORG. KHIM., KIEV, USSR.

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USSR

UDC 621.315.592

ROZUMNYUK, V. T., NESTERENKO, B. A., TSBULYA, G. G., LISITSA, M. P., SNITKO, O. V., Institute of Semiconductors, Academy of Sciences of the UkrSSR, Kiev

"Optical Properties of Germanium with a Clean Surface and with an Oxidized Surface"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 9, Sep 70, pp 1770-1775

Abstract: The authors investigate the effect which the physicochemical state of the surface has on the reflectivity of semiconductors. The study specimens were single crystals of germanium with atomically clean and oxidized (etched) surfaces. In addition to reflection, the specimens were studied for edge absorption and photoconductivity. It was found that the reflection spectra of germanium with an atomically clean surface have two peaks with energies of 2.6 and 2.8 eV in addition to the peaks at 2.1 and 2.3 eV inherent in specimens with oxidized surface. A surface origin is attributed to the maxima at 2.6-2.8 eV, while the maxima at 2.1-2.3 eV are assumed to stem from transitions within the specimen. The atomically clean surface also shows a shift of 0.02 eV toward the short-wave region as compared with the oxidized surface in studies of edge absorption and photoconductivity. This

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ROZUMNYUK, V. T., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 9, Sep 70, pp 1770-1775

shift is attributed to the simultaneous effect of various mechanisms involving optical transitions on surface levels, quantum effects associated with the strong electrical field on the atomically clean surface and simple physical changes such as surface tension.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

172 012 UNCLASSIFIED PROCESSING DATE--18DEC70

TITLE--MASS SPECTROMETRIC DETERMINATION OF AMINO ACID SEQUENCES IN PEPTIDES. XV. FRAGMENTATION OF PEPTIDES CONTAINING MONOAMINO

AUTHOR-(05)-SHEMYAKIN, M.M., OVCHINNIKOV, YU.A., KIRYUSHKIN, A.A., NIKOLSHNIKOV, A.I., ROZYNOV, B.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 443-60

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AMINO ACID, PEPTIDE, ESTER, MASS SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1254 STEP NO--UR/0079/70/040/002/0443/0460

CIRC ACCESSION NO--AP0107730

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

2/2 012 UNCLASSIFIED PROCESSING DATE--16OCT70
IRC ACCESSION NO--AP0107730
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MASS SPECTRA WERE TABULATED FOR 17 PEPTIDES WITH ASPARTIC AND GLUTAMIC RESIDUES IN VARIOUS POSITIONS, EXAMD. IN THE FORM OF ME OR TERT-BU ESTERS AT THE TERMINAL CO SUB2 H. SUCH PEPTIDES HAVE RELATIVELY HIGH VOLATILITY. THE MASS SPECTRA SHOWED THE USUAL AMINO ACID TYPE OF CLEAVAGE ALONG WITH LOSS OF ELEMENTS OF THE ALC. OF THE ESTER AND OF THE RO SUB2 C GROUP. FACILITY: INST. KHIM. PRIR. SOEDIN., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

1/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--MAGNETO RESISTANCE IN THIN FILMS OF NICKEL PALLADIUM ALLOY SYSTEMS
-U-
AUTHOR-(04)-ANNAYEV, R.G., ROZYEV, M.A., MYALIKGULYEV, G., YAZLIYEV, S.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK TURKM. SSR, SER. FIZ. TEKH., KHIM. GEOL. NAUK 1970, (1), 101-5
DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--NICKEL ALLOY, PALLADIUM ALLOY, METAL FILM, MAGNETORESISTANCE, MAGNETIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0184 STEP NO--UR/0202/70/000/001/0101/0105

CIRC ACCESSION NO--AP0054980
UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

2/2 022 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054980

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LONGITANCE WAS MEASURED IN THIN NI-PD FILMS OVER A WIDE RANGE OF THICKNESS AND COMPN. TO CONFIRM THE I PHASE NATURE OF THE FILMS. FILMS 600-1200 ANGSTROMS THICK CONTG. 0-80 AT. PERCENT PD WERE PREPD. BY THE METHODS DESCRIBED EARLIER (1968).

A STRONG EFFECT OF THE TRUE MAGNETIZATION WAS OBSD. FOR ALL OF THE FILMS EVEN AT ROOM TEMP. THE FILMS CONTG. SMALLER THAN OR EQUAL TO 40 AT. PERCENT PD ARE SINGLE PHASE.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

UDC 543.51+661.718.1

USSR

SHAPIRO, A. B., KROPACHEVA, A. A., SUSKINA, V. I., ROZYNOV, B. V., and ROZANTSEV, E. G., Institute of Chemical Physics, Academy of Sciences USSR, and All-Union Institute of Pharmaceutical Chemistry imeni S. Ordzhonikidze

"Mass Spectrometric Study of Ethylenephosphoramide Paramagnetic Derivative"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 71, pp 864-867

Abstract: The authors synthesized previously unknown paramagnetic derivatives of 2,2,5,5-tetramethylpyrrolidine-1-oxyl-3-amido- and 2,2,6,6-tetramethylpiperidine-1-oxyl-4-amidodiethyleneimidothiophosphoric acid and made a mass spectrometric study of their fragmentation by electron impact. A mechanism is suggested for the decay of molecular ions of ethylenephosphoramide paramagnetic derivatives.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

1/2 014 UNCLASSIFIED PROCESSING DATE--23OCT7(

TITLE--MASS SPECTROMETRIC DETERMINATION OF AMINO ACID SEQUENCES IN PEPTIDES. XIII. FRAGMENTATION OF PEPTIDES CONTAINING ASPARAGINE AND

AUTHOR-(05)-SHEMYAKIN, M.M., OVCHINNIKOV, YU.A., KIRYUSHKIN, A.A., MIROSHNIKOV, A.I., ROZYNOV, B.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSCH. KHIM. 1970, 40(2), 407-29

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PEPTIDE, ASPARAGINE, GLUTAMIC ACID, AMINE DERIVATIVE, MASS SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/2017 STEP NO--UR/0079/70/040/002/0407/0429

CIRC ACCESSION NO--AP0120660

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

2/2 014 UNCLASSIFIED PROCESSING DATE--23OCT7

CIRC ACCESSION NO--AP0120660

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MASS SPECTRA WERE TABULATED FOR 2 PEPTIDES CONTG. ASPARAGINE AND GLUTAMINE PORTIONS IN VARIOUS PARTS OF THE CHAIN, AND EXAMD. IN THE FORM OF ME OR TER-BU ESTERS. SUCH PEPTIDE WERE DECOMPD. BY ELECTRON IMPACT MAINLY ALONG THE LINES OF AMINO ACID TYPE FRAGMENTATION, ACCOMPANIED BY ELIMINATION OF NH SUB3 AND CARBOXAMIDE GROUP. FACILITY: INST. KHIM. PRIR. SOEDIN., MOSCOW USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

UDC 621.384.634

USSR

ALEKSANDROV, I. A., FRACHEV, M. I., GUBRIYENKO, K. I., YEMENKO, YE. V., KOTOV, V. I., NEKRASOV, A. N., PRILEPIN, A. A., PISHUGIN, V. A., RSAYEV, R. A., SAMOYLOV, A. V., SELEZNEV, V. S., SEREBRSAKOV, B. A., KHANAMIRYAN, A. YE., and KHODYREV, YU. S.

"Negative Particle Channel With Momentum up to 60 Gigaelectron Volts/Second"

Moscow, Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 29-34

Abstract: This article contains a description of a channel for transporting negative particles generated in an internal accelerator target with momentum up to 60 fifaelectron volts/second and an accelerated proton energy of 70 gigalectron volts. The channel is designed so that for an accelerated proton energy of 70 gigaelectron volts it can be adjusted to momentum in the range of 40-60 gigaelectron volts/second. On reducing the energy of the accelerated protons, the channel can be adjusted to lower momentum. The lower limit corresponds to an accelerated proton energy of 20 gigaelectron volts and is equal to 11.4 gigaelectron volts/second.

The optical system of the channel and its characteristics

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

ALEKSANDROV, I. A., et al., Atomnaya Energoya, Vol 29, No 1, Jul 70, pp 29-34

are presented. The limiting solid capture angle of the secondary particles by the channel is 32 microsteradians. The best resolution with respect to momentum is 0.3 percent without decreasing the pacture angle. The channel was investigated primarily using a secondary beam with a momentum of p = 50 gigaelectron volts/second. The procedure for adjusting the channel and the calculated data are described. The differences between the calculated operating conditions of the elements and the conditions after adjustment together do not exceed the errors of the fringing field of the accelerator, the magnetization curve, and the curve for calibrating the bypasses of the magnet. On the whole, the beam parameters agree well with the calculated data.

A detailed diagram of the channel layout is presented, and graphs are presented for the radial position of the targets and the production angle as functions of the momentum of the secondary particles, the optical system of the channel and path of the beams in the horizontal and vertical planes, the momentum

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

ALEKSANDROV, I. A., et al., Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 29-34

resolution of the channel, the beam profile with momentum of 50 gigaelectron volts/second in the parallel section and slit width of the aperture collimators of +20 mm and the pulse collimator +6mm, the beam profile with momentum of 50 gigaelectron volts/second in the final representation on including the lens doublet, and the beam profile with momentum of 50 gigaelectron volts/second in the final representation on including a lens triplet.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

1/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EFFECT OF SOME STRUCTURAL FACTORS ON PHOTOCHEMICAL REACTIONS OF LEUCOCYANIDES OF TRIARYLMETHANE DYES -U-

AUTHOR-(03)-RTISHCHEV, N.I., MIKHALCHENKO, G.A., GINZBURG, O.F.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3), 582-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--PHOTOCHEMISTRY, CYANIDE, METHANE, DYE, PHOTOLYSIS, LUMINESCENCE, PHOTOEFFECT, ARYL RADICAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1465 STEP NO--UR/0366/70/006/003/0582/0586

CIRC ACCESSION NO--AP0116902

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

2/2 026 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116902

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UV IRRADN. OF (RHO,ME SUB2 NC SUB6 H SUB4) SUB2 C(CN)R (I) IR IS RHO,ET SUB2 NC SUB6 H SUB4 C SUB6 H SUB4,RHO, RHO,MEOC SUB6 H SUB4 C SUB6 H SUB4,RHO, RHO,PHC SUB6 H SUB4, RHO,ME SUB2 NC SUB6 H SUB4 CH:CH, ET SUB2 NC SUB6 H SUB4 CH:CH, RHO,(3,4,0 SUB2 N(ME SUB2 N), C SUB6 H SUB3) SUB2 NC SUB6 H SUB4 CH:CH) CAUSES PHOTOLYSIS AND LUMINESCENCE. THE PHOTOLYSIS OBEYS 1ST ORDER KINETICS. THE QUANTUM YIELDS OF PHOTODISSOCN. ARE VERY LOW. THE PROBABILITY OF THE PHOTODISSOCN. REMAINS APPROX. CONST. THROUGHOUT THE UV WAVELENGTH RANGE. FACILITY: LENINGRAD, TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

1/2 027 UNCLASSIFIED PROCESSING DATE--020CT70

TITLE--MATERIALS ON THE FUNCTIONAL INVESTIGATION OF THE BLOOD COAGULATION SYSTEM IN THE CLINICAL PICTURE OF HYPERTENSIVE DISEASE -U-

AUTHOR--RTSKHILADZE, G.I.

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 3, PP 87-94

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYPERTENSION, HEART DISEASE, DIABETES MELLITUS, MEDICAL APPARATUS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/0833 STEP NO--UR/0504/70/042/003/0087/0094

CIRC ACCESSION NO--AP0102795

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

2/2 027 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102795

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR GIVES THE DATA OF THE FUNCTIONAL CONDITION OF THE BLOOD COAGULATION ON THE APPARATUS VISCOSOTHROMBRETRACTOGRAPH CONDUCTED IN PATIENTS WITH HYPERTENSIVE DISEASE (128 PATIENTS). PARTICULARLY, PATIENTS WITH ATTACKS OF ANGINA PECTORIS, ACUTE MYOCARDIAL INFARCTION AND CONCOMITANT DIABETES MELLITUS WERE STUDIED. ON THE BASIS OF THE RESULTS OBTAINED THE AUTHOR RECOMMENDS INDICATIONS AND CONTRAINDICATIONS TO TREATMENT WITH ANTICOAGULANTS IN HYPERTENSIVE DISEASE.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

Thin Films

USSR

UDC: 541.124/.128

RTSKHILADZE, V. G., MOISTSRAPISHVILI, A. V., CHITORELIDZE, G. M., MAMULASHVILI, M. P., ABASHIDZE, T. D.

"Study of the Possibility of Producing Epitaxial Gallium Arsenide by the Method of Chemical Transport Reactions in a Stream of Argon"

Soobshcheniya Akademii Nauk Gruzinskoy SSR, Vol 67, No 3, 1972, pp 637-640.

Abstract: This article presents a study of chemical-transport deposition of gallium arsenide films, with the usual hydrogen transport medium replaced by the inert gas argon. The reaction at the source zone is

$$AsCl_{3(g)} + 3GaAs_{(s)} \rightleftarrows 3GaCl_{(g)} + As_{4(g)},$$

and in the deposition zone

$$6GaCl_{(g)} + As_{4(g)} \rightleftarrows GaAs_{(s)} + 2GaCl_{3(g)}.$$

The reaction tube was heated by a resistance furnace with two independent heaters. Temperature was maintained with an accuracy of 0.5°C in each zone. The study showed that the main factor influencing etching of the

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

RTSKHILADZE, V. G., et al., Soobshcheniya Akademii Nauk Gruzinskoy SSR
Vol 67, No 3, 1972, pp 637-630

substrates and decreasing growth rate at high stream velocities was the increase in the quantity of $AsCl_3$ present at the source zone. The growth rate as a function of argon stream velocity shows a maximum at about 70 cm^3/min, the subsequent decrease resulting from the fact that, due to the high difference in temperature drop between the two zones, a portion of the gallium arsenide formed is deposited on the walls of the reaction vessel before reaching the substrate zone. The quality of the epitaxial layer produced increases with increasing deposition temperature up to 710-730°C. The films produced were monocrystalline, oriented in the same direction as the substrate.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

1/2 032 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--KINETICS OF THE DISSOLUTION OF CERTAIN METALS IN NITROSE -U-

AUTHOR-(03)-RTVELADZE, V.V., BONDIN, S.M., KRESTOVNIKOV, A.N.

COUNTRY OF INFO--USSR

SOURCE--IZVEST. V.U.Z., TSVETNAYA MET., 1970, (1), 35-38

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--CHEMICAL KINETICS, NITROSO COMPOUND, COPPER, SILVER, PALLADIUM, SULFURIC ACID, NITROGEN OXIDE, CORROSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1551 STEP NO--UR/0149/70/000/001/0035/0038

CIRC ACCESSION NO--AP0125177

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

2/2 032 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125177
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF THE DISSOLUTION OF CU, AG, AND PD IN NITROSE (FORMALLY REPRESENTED BY H SUB2 SO SUB4 PLUS NO) WAS STUDIED USING THE ROTATING DISC METHOD. THE RATE OF DISSOLUTION VARIED AS THE SQUARE ROOT OF THE NUMBER OF REVOLUTIONS. THE RATE OF DISSOLUTION OF PD AND AG WAS OF THE FIRST ORDER IN RELATION TO THE ACID CONCENTRATION; THE DISSOLUTION OF CU OBEYED A MORE COMPLEX RELATION. THIS DIFFERENCE WAS ATTRIBUTED TO THE FACT THAT THE DISSOLUTION OF CU WAS GOVERNED BY DIFFUSION PROCESSES, AND THAT OF PD AND AG BY A COMBINATION OF DIFFUSION AND KINETIC MECHANISMS.

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USSR UDC 612.017.12:612.461.269.014.482

RUBACHEV, I. G., STREL'NIKOV, V. A., FEDOROVA, T. A., KLEMPARSKAYA, N. N., DUKHOVNAYA, E. M., and FURAYEVA, L. P.

"The Effects of Irradiation on the Urinary Excretion of Thymidine and Beta-Aminoisobutyric Acid in Immunized Rats"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunibiologii, Vol 10, Oct 70, p 142

Translation: Whole-body irradiation of animals induces massive decomposition of desoxynucleoproteins and liberation and depolymerization of DNA in the cells of organs sensitive to irradiation. At the same time, there is an increased urinary excretion of desoxynucleosides — desoxycytidine and thymidine, and of the products of thymidine catabolism — beta-aminoisobutyric acid. A study of the dynamics of the excretion of these substances makes it possible to elucidate the nature of DNA metabolism in the body during the 1st day after irradiation and, during the subsequent period, the nature of restoration processes taking place in the rapidly regenerating tissues.

In a previous study, we established that after active immunization, rats have an increased urinary excretion of beta-aminoisobutyric acid, especially during

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RUBACHEV, I. G., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunibiologii, Vol 10, Oct 70, p 142

the period of maximum concentration of agglutinins in peripheral blood, and a decreased concentration of plasmocytes in the lymph nodes. In this investigation, we studied the level of DNA decomposition (based on the urinary excretion of thymidine and beta-aminoisobutyric acid) and the dynamics of the formation of antibodies (according to the titers of agglutinins) in vaccinated and irradiated rats. The animals received a single dose of whole-body irradiation (500 r) from the EECO-2 generator (power, 640 r/min; gamma rays, Co^{60}) 48 hours prior to and 48 hours after vaccination. Immunization was performed with Breslau bacilli killed with heat, which were administered intramuscularly in a dose of 1 billion microbial cells in 0.5 ml. Irradiation prior to and after immunization equally suppressed the formation of agglutinins (approximately three times). During the 1st day after irradiation, the level of thymidine excretion in controls, and immunized animals also increased to an equal degree (5 and 2.5-3 times, respectively). This fact and the equivalent degree of inhibition of antibody formation indicated that immunization performed 48 hours prior to irradiation exerted no protective effects on the

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USSR

RUBACHEV, I. G., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunibiologii, Vol 10, Oct 70, p 142

decomposition of lymphoid tissue during the 1st day after irradiation or on its ability to produce antibodies. Subsequently, the level of thymidine excretion by control animals and those of the experimental group differed considerably from the standpoint of excretion of beta-aminoisobutyric acid (these differences were insignificant). During the subsequent period (up to 11 days), irradiated control animals displayed a considerable decrease (3-5 times) in thymidine excretion as compared to the initial level. Normal or above-normal thymidine excretion was observed on the 7th-11th days after immunization in animals immunized after irradiation, and on the 2nd-6th days after irradiation or on the 4th-8th days after immunization in animals immunized prior to irradiation. This development may be associated with regenerative processes which apparently begin earlier and proceed at a more rapid rate.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

UDC 617-001.28-07:616.633.963.074

FEDOROVA, T. A., RUBACHEV, P. G., and DUKHOVNAYA, E. M.

"Specificity of Nucleosidura in the Irradiated Organism"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 10, Oct 70, pp 42-44

Abstract: The excretion of thymidine and beta-aminoisobutyric acid in the urine was studied in rats exposed to various agents capable of destroying cells including irradiation (Co^{60}), third-degree burns, immunization with Breslau paratyphod vaccine, and hydrocortisone. All four agents increased the excretion of thymidine and beta-aminoisobutyric acid, but not to the same degree or at the same time. The greatest and most rapid increase was produced by irradiation. The effects decreased for hydrocortisone, burns, and immunization, in that order. After irradiation, for example, the excretion of thymidine reached a peak within 24 hours, exceeding the original level by a factor of 5-6. After third-degree burns, it reached a peak on the 11th day and exceeded the original level by a factor of 2.6. All four agents increased the excretion of beta-aminoisobutyric acid in the urine to approximately the same degree.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

UDC: 621.396.6:621.318(088.8)

RUBAL'SKAYA, E. V., GENDELEV, S. Sh., RUBINSHTEYN, B. Ye., YAKOVLEV, Yu. M. TITOVA, A. G.

"A Charge for Growing Ferrite Single Crystals"

USSR Author's Certificate No 253953, filed 4 May 67, published 30 Apr 70 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V422 P)

Translation: This Author's Certificate introduces a charge composition which makes it possible to increase the saturation induction of ferrites (90.5 T) while retaining a narrow ferromagnetic resonance line. The charge consists of higher oxides of iron, zinc, lead and boron (13.3-16.0, 0.3-1.8, 68.1-68.7 and 10.4-11.0 wt.% respectively), and Li_2CO_3. Heat treatment conditions are described. Also covered by the patent is a charge composition for making ferrites with a saturation induction of up to 0.44 T; a distinguishing feature of this composition is the substitution of gallium oxide for zinc oxide. The propotions by weight are also changed. N. S.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

UDC 548.58

RUBAL'SKAYA, E. V., PETROV, T. G., and TITOVA, A. G.

"Study of the Solubility of Lithium, Nickel, and Magnesium Ferrites in $PbO—B_2O_3$"

Moscow, Kristallografiya, Vol 15, No 5, Sep-Oct 70, pp 1094-1096

Abstract: A study was made of the temperature dependence of the solubility of lithium, nickel, and magnesium ferrites in the solvent $PbO—B_2O_3$. The solubility data were obtained by determining the solution saturation temperature on the basis of growth -- the dissolution of seeds from the crystallized materials. A somewhat smoothed bend of the solubility curve was found in the 1000° C region for lithium ferrite and the 1200° C region for nickel ferrite, most clearly expressed on the plot by the derivative $\partial c/\partial T = f(T)$.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

UNCLASSIFIED

TITLE--FERROMAGNETIC RESONANCE AND NONLINEAR EFFECTS IN LITHIUM AND ZINC FERRITE SINGLE CRYSTALS -U-

AUTHOR-(04)-YAKOVLEV, YU.M., VINNIK, M.A., RUBALSKAYA, E.V., LAPOVOK, B.L.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 866-72

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--SINGLE CRYSTAL, FERROMAGNETIC RESONANCE, LITHIUM, FERRITE CRYSTAL, CRYSTAL LATTICE STRUCTURE, MAGNETIC MOMENT, BORON OXIDE, LEAD OXIDE, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0620

STEP NO--UR/0181/70/012/003/0866/0872

CIRC ACCESSION NO--AP0105600

UNCLASSIFIED

PROCESSING DATE--18SEP70

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

2/3 036 UNCLASSIFIED

CIRC ACCESSION NO--AP0105600 PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STATIC MAGNETIC PROPERTIES WERE INVESTIGATED OF SINGLE CRYSTALS OF LI AND ZN FERRITE, LI SUB0.5(1 MINUS X)FE SUB0.5(1 MINUS X)ZN SUBX FE SUB2 O SUB4, WHERE X EQUALS 0, 0.1, 0.18, AND 0.24. THE CRYSTALS WERE GROWN FROM PBO PLUS B SUB2 O SUB3. ON VARIATION OF THE COMPN., THE LATTICE PARAMETER VARIES IN THE LIMITS (8.331-8.367) PLUS OR MINUS 0.001 A. THE MAGNETIC MOMENT WAS MEASURED BY THE METHODS OF WEISS AND FARADAY IN FIELDS IS SMALLER THAN OR EQUAL TO 10 KOE. REPLACEMENT OF PART OF THE TETRAHEDRAL FE AND LI IONS BY ZN IONS LEADS TO AN INCREASE IN THE MAGNETIC MOMENT AND DECREASE IN THE CURIE TEMP. OF THE COMPD. AT X EQUALS 0.24, CRYSTALS WERE OBTAINED WITH MAGNETIZATION, 4PIM EQUALS 4900 G AT NORMAL TEMP. THE EXPTL. DATA ON THE MAGNETIC MOMENT AND THE CURIE TEMP. ARE COMPARED WITH THE DATA OBTAINED IN TERMS OF THE MODEL OF NEEL AND GILIO. MEASUREMENTS OF THE FERROMAGNETIC RESONANCE OF THE SYNTHETIC CRYSTALS ALLOWED ONE TO DET. THE 1ST AND 2ND ANISOTROPY CONSTS. (K SUB1 AND K SUB2) AS FUNCTIONS OF TEMP. AND ALSO TO OBSERVE NONLINEAR 1ST ORDER PROCESSES AT COINCIDENCE OF THE RESONANCES AT 9.1 GHZ. THE RATHER WEAK DEPENDENCE OF K SUB1 ON THE COMPN. INDICATES THAT THE CONTRIBUTION OF THE I ION MECHANISM OF ANISOTROPY IN THE INVESTIGATED SOLID SOLNS. IS SMALL. TEMP. DEPENDENCES ARE GIVEN OF THE WIDTH OF THE RESONANCE LINE MEASURED FOR SPECIMENS OF 3 COMPNS. UNDER VARIOUS CONDITIONS OF POWER AND IN VARIOUS CRYSTALLOGRAPHIC DIRECTIONS. THE LIMITING FREQUENCY OF THE REGION OF CONINCIDENCE IS PRACTICALLY INDEPENDENT OF THE ORIENTATION OF THE SPECIMEN IN THE (110) PLANE RELATIVE TO THE CONST. MAGNETIC FIELD.

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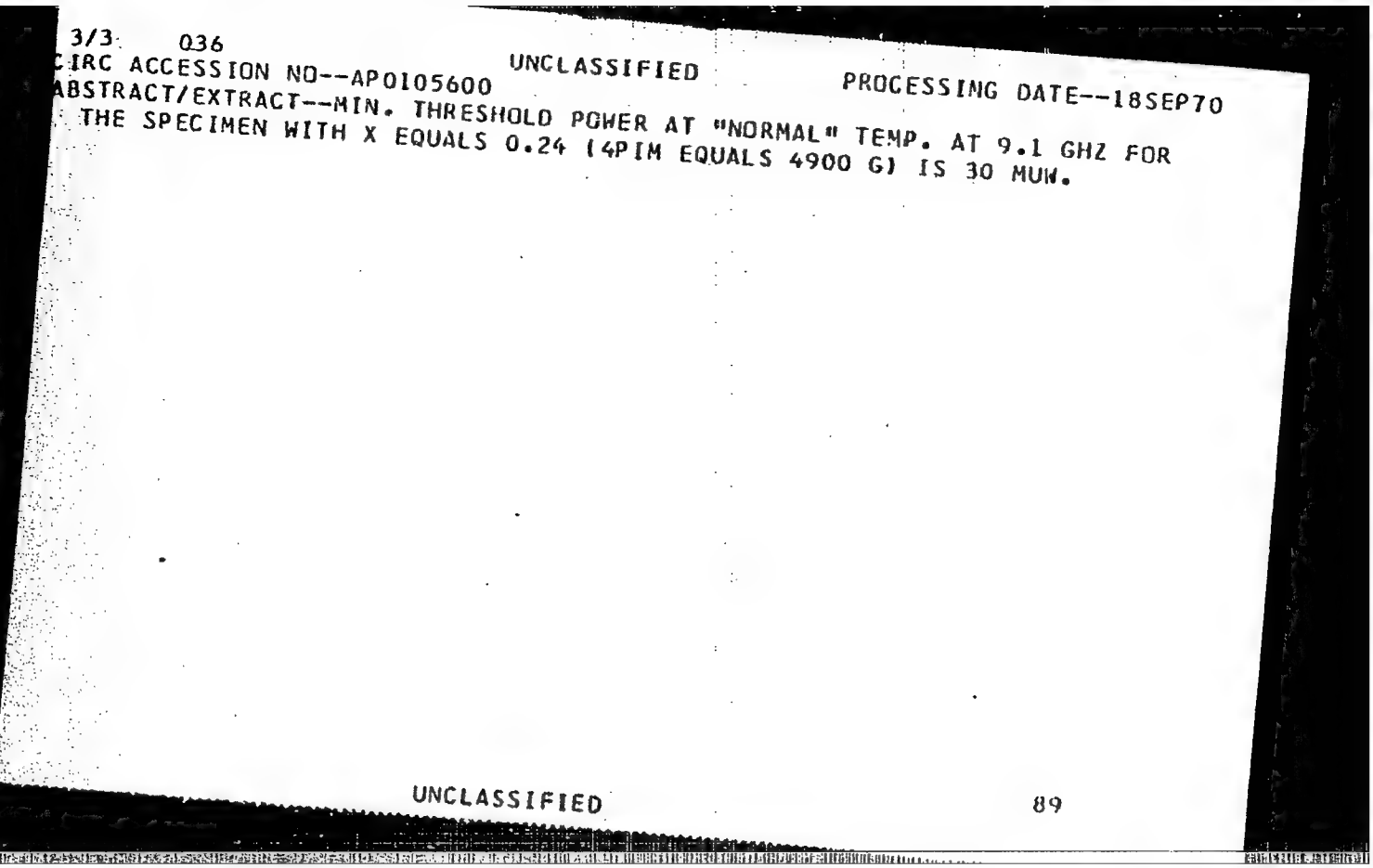

3/3 036 UNCLASSIFIED PROCESSING DATE--18SEP70
CIRC ACCESSION NO--AP0105600
ABSTRACT/EXTRACT--MIN. THRESHOLD POWER AT "NORMAL" TEMP. AT 9.1 GHZ FOR THE SPECIMEN WITH X EQUALS 0.24 (4PIM EQUALS 4900 G) IS 30 MUW.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

UDC 51

RUBAL'SKIY, G. B.

"Control of Reserves with the Same Nomenclature in the Case of a Recurrent Flow of Requests"

Tr. Konf. Mosk. fiz.-tekhn. in-ta, 1970, Ser. Aerofiz. Prikl. mat. (Works of the Conference of the Moscow Physico-technical Institute, 1970. Aerophysics and Applied Mathematic Series), Moscow, 1971, pp 93-102 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V523)

Translation: A study was made of the model of controlling reserves with an input flow which does not depend on the warehouse state. The delivery of the ordered lot takes place with a delay. The control policies which are a generalization of the known policies of two levels and insure minimum expenditures for a broad class of functionals are investigated. The explicit analytical relations for various stationary characteristics as functions of the control parameters are presented.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

UDC 621.15:541.66

DOLZHENKOV, I. Ye., KLIMENKO, G. P., VERBOLOZ, V. D., RUBAN, A. A., KOVALYUK, V. V., and PROKOPENKO, V. Ye.

"Effect of Tempering and Self-Tempering on the Mechanical Properties of Thermally Hardened Carbon Filaments from Low-Carbon Steel"

Metallurgicheskaya i Gornorudnaya Promyshlennost', No 2, 1971, pp 26-27

Abstract: Carbon filaments 75 x 75 x 8 mm from open-hearth steel were hardened by tempering and self-tempering (i.e. a last discontinuous cooling) using electro-contact heating. Completely hardened filaments were tempered in an electrical shaft furnace from 100 to 650°C at 50° intervals for periods of 0.5 to 1.5 hours and cooled after treatment in air. The results of stability and microstructure studies confirmed previous results and indicated no change in properties after hardening by tempering or self-tempering at the same temperature and times. Changing the length of the processing time from 0.5 to 1.5 hours did not appear to affect the mechanical properties. Thermally processed filaments have a lower cold brittleness temperature. Even at -60°C the impact strength of improved steel was at the level of 15-20 kg/cm^2. The most stable values of impact strength at test temperatures from +20 to -60°C were obtained after hardening and tempering at 400-500°C.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

RUBAN, A. I.

"Identification of One Class of Stochastic Nonlinear Discrete Objects"

Avtomatika i Vychisl. Tekhn. [Automation and Computer Technology], 1973, No 3, pp 64-70 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V224)

Translation: The problem is solved of estimating the parameters of one class of Markov processes, described by a system of nonlinear stochastic difference equations with linear right parts relative to the parameters. The Bayes estimates and estimates of maximum likelihood are investigated. The accuracy of the estimate is calculated. A method of solution of essentially nonlinear problems is studied. Author's view

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USSR

RUBAN, A. I.

"Representation of the Solution of Nonlinear Differential Equations with Partial Derivatives in the Form of a Series and Use of the Series in Determination of Dynamic Characteristics with Distributed Parameters"

Izbr. Tr. Vses. Mezhvuz. Simpoz. po Prikl. Mat. i Kibernet, Gor'kiy, 1967 [Selected Works of All-Union Interdepartmental Symposium on Applied Mathematics and Cybernetics, Gor'kiy, 1967], Moscow, Nauka Press, 1973, pp 99-102 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V244, by the author).

Translation: A solution is found in the form of an integral series for a given class of nonlinear equations with partial derivatives. The problem of determination of the kernels of the series by statistical methods is studied. The accuracy of the mathematical description is estimated.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

UDC: 621.375.7

DAKHNOVICH. A. A., RUBAN, A. S., TER-MARTIROSYAN, L. T., YANCHENKO, Yu. F.

"Development of Parametric Microwave Amplifiers on a Nonlinear Dielectric"

Izv. Leningr. elektrotekhn. in-ta (News of Leningrad Electrical Engineering Institute), 1972, vyp. 101, pp 33-40 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D283 [résumé])

Translation: There has recently been a considerable increase of interest in nonlinear dielectrics as applied to parametric amplifiers in the SHF range. The prospects for paramps on a nonlinear dielectric are associated with a number of their advantages over paramps on semiconductors: intrinsically higher reliability, greater dynamic range, looser requirements for stability of the pumping level, etc. The development of such amplifiers involves a number of specifics stemming from the particular properties of ferroelectric materials. A particularly important role in this regard is played by the problem of ensuring effectiveness of heat removal from the nonlinear capacitor heated by the pumping oscillations. The paper gives the results of an experimental study of certain amplifiers with elements of VK7 ferroceramic and crystalline strontium titanate. An amplification of 20 dB is achieved in the continuous mode in a one-loop amplifier on

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USSR

DAKHNOVICH, A. A. et al., Izv. Leningr. elektrotekhn. in-ta, 1972, vyp. 101, pp 33-40

crystalline strontium titanate with pumping on 2 GHz and cooling with liquid nitrogen. Nine illustrations, bibliography of twenty titles.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

UDC: 621.375.7.029.6

VENDIK, O. G., DAKHNOVICH, A. A., RUBAN, A. S., TER-MARTIROSYAN, L. T., YANCHENKO, Yu. F.

"A Cooled Parametric Amplifier on Strontium Titanate"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 9, Sep 72, pp 1981-1983

Abstract: The paper gives the results of an experimental study of a two-circuit regenerative mavar for reflection with a planar nonlinear capacitor based on a strontium titanate thin film. The current-voltage characteristic of the capacitor is given. The signal frequency in the amplifier was 1.78 GHz, and the pumping frequency was 5 GHz. The amplifier was made in the coaxial strip version. The nonlinear capacitor was connected in a break in the central conductor of the strip line. As a distinguishing feature of the design, the energy from the pumping oscillator and the signal are sent to the same coaxial input. Separation is by a filter. Tests were done in a cryostat at 77 kelvins. The coaxial Y-circulator was located outside the cryostat. Losses in the input circuits including the circulator amounted to 1.0 dB; losses in the output circuits were 3 dB. At an amplification factor of 15 dB, the band of the proposed mavar was 12 MHz. The

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USSR

VENDIK, O. G. et al., Radiotekhnika i Elektronika, Vol 17, No 9, Sep 72, pp 1981-1983

pumping power consumption was no more than 500 mW. The calculated noise temperature was 200 K, and measurements gave 320 K. The authors thank V. V. Smirnyy for furnishing the crystal specimens.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

Plant Pathology

USSR

UDC 582.285.22:632.952

PIVOVAROVA, T. M., and RUBIN, B. A., All-Union Research Institute for Chemical Plant Protection, Moscow, and the Department of Plant Physiology, Moscow State University

"The Effects of Some Chemical Compounds with Fungicidal Properties on Puccinia graminis Pers."

Leningrad, Mikologiya i Fitopatologiya, Vol 7, No 5, 1973, pp 440-446

Abstract: Investigations were conducted on the effects of o-oxyphenyl-semicarbazide (named fenzalin by us) and N-(6-chloro-benzoxazolinone)-acrylamide (named akrizalon). Fenzalin inhibited wheat rust due to Puccinia graminis by 99%, and akrizalon was 96% effective in inhibiting wheat rust due to this agent on susceptible wheat strain PPG-599. The effects of fenzalin were primarily due to inhibition of infectious structure formation, through lysis of the growth tubules and other changes. The fungicidal effects of akrizalon were largely due to toxic effects on the uredospores on contact.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

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UDC 621.317.783(088.8)

RUBAN, I. G., KVITKOVSKIY, V. I.

"Superhigh Frequency Power Instability Meter"

USSR Author's Certificate No 252420, Filed 25 Apr 68, Published 12 Feb 70, (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9A138P)

Translation: A superhigh frequency power instability meter containing a modulator-synchronizer is proposed. The meter regulates the element, the reference voltage source and the autobalancing thermistor bridge. The purpose of the invention is to increase the measurement accuracy. For this purpose, the output of the thermistor element is connected via an amplitude detector and a preliminary amplifier to the phase detector. The latter is connected with the modulator-synchronizer and with the regulating element connected to the reference voltage source via a measuring resistor.

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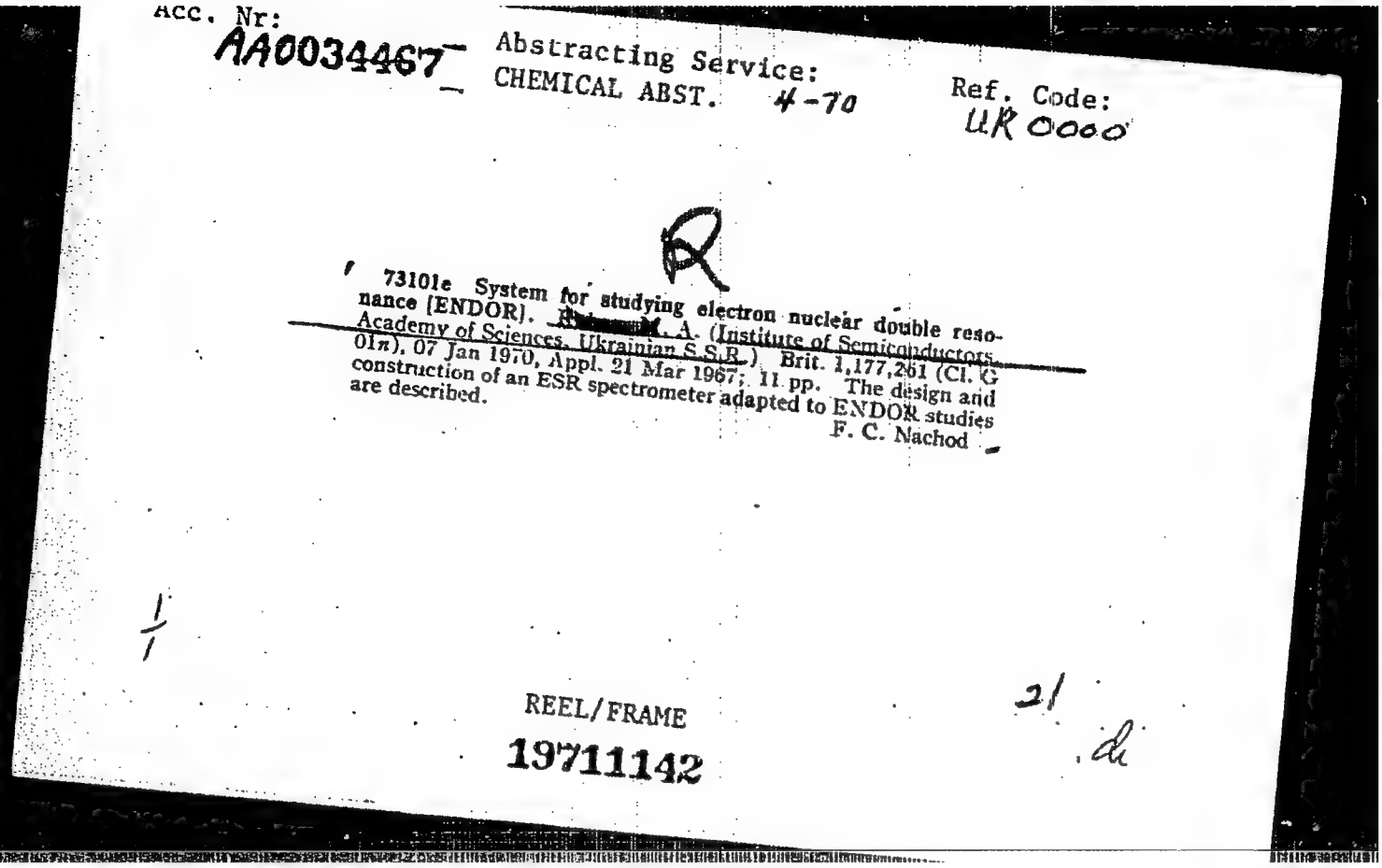

ACC. Nr: AA0034467

Abstracting Service: CHEMICAL ABST. 4-70

Ref. Code: UR 0000

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73101e System for studying electron nuclear double resonance [ENDOR]. [redacted] A. (Institute of Semiconductors, Academy of Sciences, Ukrainian S.S.R.). Brit. 1,177,261 (Cl. G 01n), 07 Jan 1970, Appl. 21 Mar 1967; 11 pp. The design and construction of an ESR spectrometer adapted to ENDOR studies are described.

F. C. Nachod

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REEL/FRAME

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--MAGNETIC HYPERFINE AND QUADRUPOLE INTERACTIONS OF F-CENTRES IN NACL AS MEASURED BY ENDOR -U-

AUTHOR-(05)-DEIGEN, M.F., ZEVIN, V.YA., ISHCHENKO, S.S., BARAN, N.P., RUBAN, M.A.

COUNTRY OF INFO--USSR

SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 37, NR 1, PP 237-246

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--F CENTER, HYPERFINE STRUCTURE, QUADRUPOLE MOMENT, SODIUM CHLORIDE, NUCLEAR MAGNETIC RESONANCE, ELECTRON RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/1075 STEP NO--GE/0030/70/037/001/0237/0246

CIRC ACCESSION NO--AP0107584
UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

2/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0107584

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HYPERFINE AND QUADRUPOLE INTERACTIONS OF F-CENTRES IN NACL WERE INVESTIGATED BY THE ENDOR METHOD. THE CONSTANTS OF HYPERFINE INTERACTIONS WITH NUCLEI OF COORDINATION SHELLS I TO X SURROUNDING THE VACANCY HAVE BEEN DETERMINED. THE QUADRUPOLE INTERACTION WITH NUCLEI OF SHELLS II, IV, VI, AND VIII HAS BEEN RECORDED AND MEASURED. GENERAL EXPRESSIONS FOR ENDOR FREQUENCIES ARE GIVEN IN SINGLE PARTICLE APPROXIMATION, ALLOWANCE BEING MADE FOR THE DEVIATION OF THE NUCLEAR SPIN QUANTIZATION AXIS FROM THE DIRECTION OF THE CONSTANT MAGNETIC FIELD II SUBO AND FOR CORRECTIONS DUE TO SECOND ORDER PERTURBATION THEORY. THE ANGULAR DEPENDENCE OF ENDOR SPECTRA HAS BEEN INVESTIGATED IN DETAIL AND FULLY EXPLAINED ON THE BASIS OF THEORETICAL FORMULAE. THE CONSTANTS WERE DETERMINED AT T EQUALS 20, 77, AND 300DEGREESK. FACILITY: INSTITUTE FOR SEMICONDUCTORS, ACADEMY OF SCIENCES, UKRAINIAN SSR. FACILITY: KIEV POLYTECHNICAL INSTITUTE.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

UDC 621.762:669.018.24(088.8)

DYMCHENKO, V. A., and RUDAN, N. A.

"Cermet Antifriction Material"

USSR Author's Certificate No 254093, filed 11 Mar 68, published 20 Mar 70 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11G355)

Translation: A cermet antifriction material based on Cu, containing 10-12% Rb, 9-10% Sn, and 15-16% graphite designed for work under the conditions of dry friction, is proposed. The material is produced by compacting a mixture of powders of starting components under a pressure of ~ 6 t/cm^2 and sintering at 780° over a period of 1 hr, and thereafter at 280° over a period of one-half hour. The material possesses the following mechanical properties: HB = 28-30 kg/mm^2, σ_β during compression = 11-13 kg/mm^2, a_K = 0.05-0.07 kgm/cm^2, and friction coefficient of 0.15-0.18. 1 table.

I. Brokhin

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

Titanium

USSR

UDC 669.295.053.4

KOPYLOVA, YE. A., RUBAN, N. N.

"Problem of Removing Oxygen-Containing Products of Hydrolysis From Industrial Titanium Tetrachloride"

Sb. tr. Vses. mezhvuz. nauch. konferentsii po teorii protsessov tsvetn. metallurgii (Collected Works of the All-Union Interuniversity Scientific Conference on the Theory of Processes in Nonferrous Metallurgy), Alma-Ata, 1971, pp 203-206 (from RZh-Metallurgiya, No 7, Jul 1971, Abstract No 7G239)

Translation: The polymer form of $TiOCl_2$ dissolved in $TiCl_4$ was established spectroscopically. The polymer nature of these solutions explains their capacity for stable supersaturation and the formation of incompressible structured suspensions and solid-like masses. The solutions, suspensions, and gels of $TiOCl_2$-$TiCl_4$ are considered as lyophilic colloidal systems. The selected hydrolysis of $TiOCl_2$ in solutions, suspensions, and gels is established. There are 2 illustrations and an 8-entry bibliography.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

UDC 669.295.48

KHUDAYBERGENOV, T. YE., RUBAN, N. N., NISEL'SON, L. A., POGORELOV, V. I., GOLUBKOV, YU. V.

Pererabotka pul'p chetyrekhkhloristogo titana i mednovanadiyevykh kekov (Processing Titanium Tetrachloride Pulp and Copper-Vanadium Cakes), Institute of Metallurgy and Beneficiation of the Kazakh SSR Academy of Sciences, Alma-Ata, 1971, 21 pp, 19-entry bibliography (No2694-71 Dep) (from RZh-Metallurgiya, No 7, Jul 1971, Abstract No 7G241 DEP)

Translation: This is a survey. The published information about the methods of processing $TiCl_4$ pulp and Cu-V cakes to extract $TiCl_4$ and V and Cu compounds is classified. A critical analysis is performed, and it is demonstrated that all the proposed procedures have a number of essential deficiencies both with respect to equipment and technological process. These deficiencies make it impossible to introduce them into industrial production. It is recommended that scientific research work be continued in this area. The bibliography has 19 entries.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

UDC 669.295.046.43

RUBAN, N. N., DAVYDOVA, T. YA., CHERNYSHOVA, T. A., KOPYLOVA, YE. A., KOLDOBSKAYA, K. N.

""Solubility of Titanium Tetrachloride in Melts of Alkali and Alkaline-Earth Metals"

O rastvorimosti chetyrekhkhloristogo titana v rasplavakh shchelochnykh i shchlochno-zemel'nykhmetallov, Institute of Metallurgy and Beneficiation, Kazakh SSR Academy of Sciences, Alma-Ata, 1970, 88 pp, ill, 11-entry bibliography (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G227DYeP)

Translation: The results of studying $TiCl_4$ solubility in melts made up of a mixture of chlorides of alkali and alkaline earth metals, which has significance in the processes of chlorinating raw material containing Ti and when purifying $TiCl_4$, are discussed. The solubility of $TiCl_4$ depends little on the temperature or the composition of the solvent. It depends to some extent on the duration of the experiments. According to infrared spectroscopic and petrographic analysis data, the solubility of $TiCl_4$ in a melt of chlorides of alkali and alkaline earth metals is directly related to the presence of residual water in it. There are 6 illustrations, 5 tables, and an 11-entry bibliography.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

Acc. Nr: AP0038042

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1970, Vol 58, Nr 1, pp 199-210

DEPOLARIZATION OF NEUTRONS PASSING THROUGH A FERROMAGNETIC

S. V. Maleyev, V. A. Ruban

Depolarization of neutrons passing through a ferromagnetic sample in the saturated state is considered. The depolarization is caused by random magnetic fields produced by thermal motion of the atomic spins. In the most interesting case, when the neutron polarization is parallel to the external field, the depolarization is expressed in terms of the magnetization fluctuation correlator. It is shown that depolarization is determined by fluctuations averaged over the quantum indeterminancy of the neutron position in the beam; it thus strongly depends on the angular divergence of the beam and on its degree of monochromaticity. For a wide and nonmonochromatic beam the depolarization is proportional to the total cross section for inelastic magnetic scattering. Formulas for depolarization are derived on basis of spin wave theory and it is noted that an experimental study of depolarization should permit one to determine the main parameters of the theory. Depolarization in the critical region is discussed qualitatively.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

UDC 617-001.28-036.11-036.8:616.411-07

KOVAL', A. I., SHAMRAY, A. Ye., and RUBAN, V. I., Scientific Research Institute of Hematology and Blood Transfusion, and Laboratory of Histochemistry and Electron Microscopy, Institute of Otorhinolaryngology, Kiev

"Effect of Transplantation of Homologous Bone Marrow on the Nucleic Acid Content of the Spleen During Acute Radiation Sickness"

Kiev, Vrachebnoye Delo, No 9, Sep 70, pp 103-107

Abstract: Rats were exposed to lethal doses of X-rays (800 to 850 r) and, 24 hours later, received homologous bone marrow transplants intravenously. Both the RNA and, in particular, the DNA content of the spleen decreased sharply after irradiation. Restoration began on the 8th day, by the 30th day, both nucleic acids were at normal levels. All of the control animals (which did not receive the bone marrow transplants) likewise exhibited a marked decrease in the nucleic acids, especially by the 4th day, a slight increase until the 8th day, and then a steady decrease until the 12th or 13th day, when they died.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

RUBAN, V. YA.

UDC 51

"Set Theory Approach to the Synthesis of the Information Structure of an Integrated Data Processing System within the Framework of Automated Enterprise Control Systems"

V sb. Sistemotekhnika (Systems Engineering--collection of works), Kiev, 1971, pp 126-129 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V381)

No abstract

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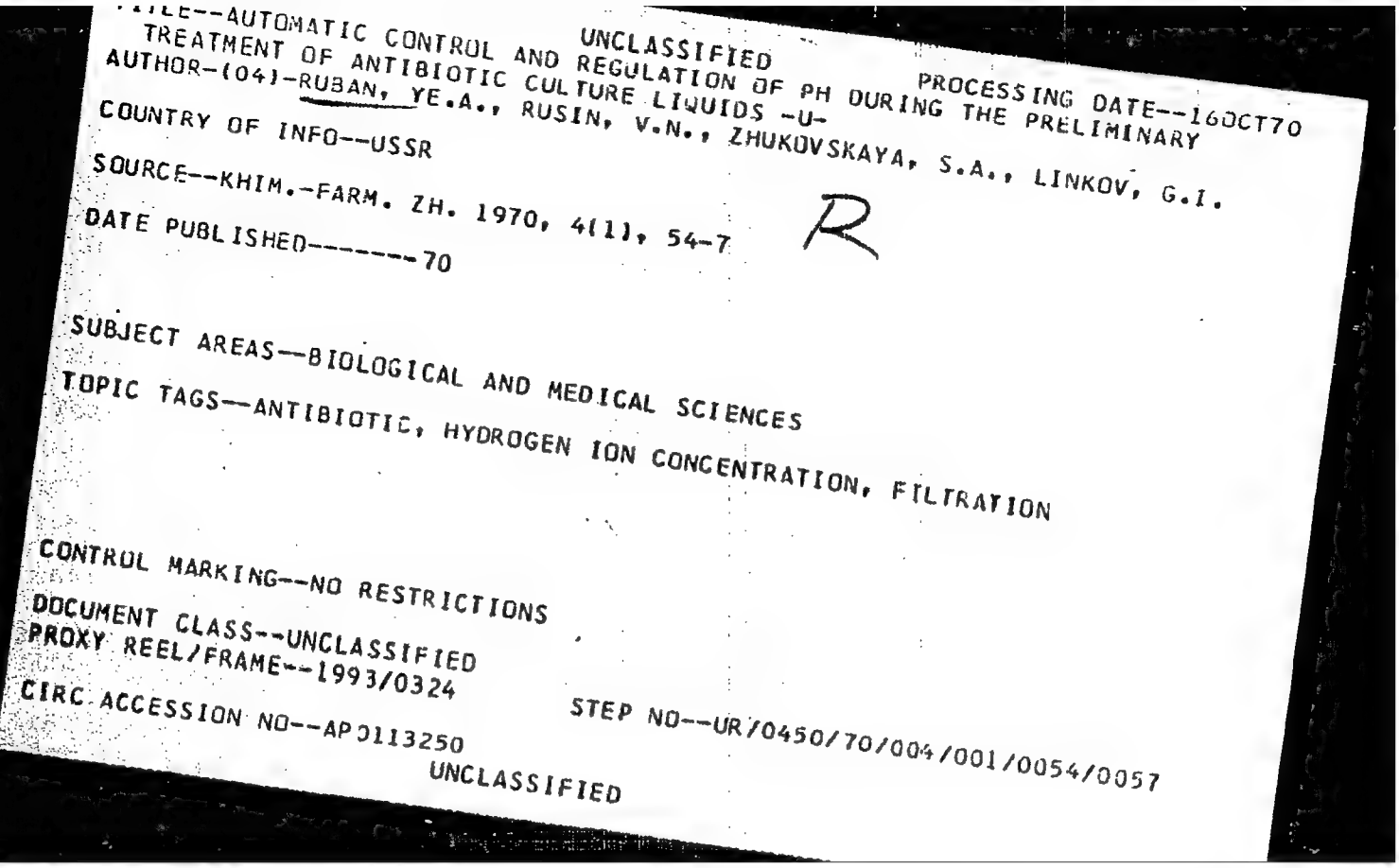

UNCLASSIFIED

TITLE--AUTOMATIC CONTROL AND REGULATION OF PH DURING THE PRELIMINARY TREATMENT OF ANTIBIOTIC CULTURE LIQUIDS -U-

PROCESSING DATE--16OCT70

AUTHOR-(04)-RUBAN, YE.A., RUSIN, V.N., ZHUKOVSKAYA, S.A., LINKOV, G.I.

COUNTRY OF INFO--USSR

SOURCE--KHIM.-FARM. ZH. 1970, 4(1), 54-7

R

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIBIOTIC, HYDROGEN ION CONCENTRATION, FILTRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0324

STEP NO--UR/0450/70/004/001/0054/0057

CIRC ACCESSION NO--AP0113250

UNCLASSIFIED

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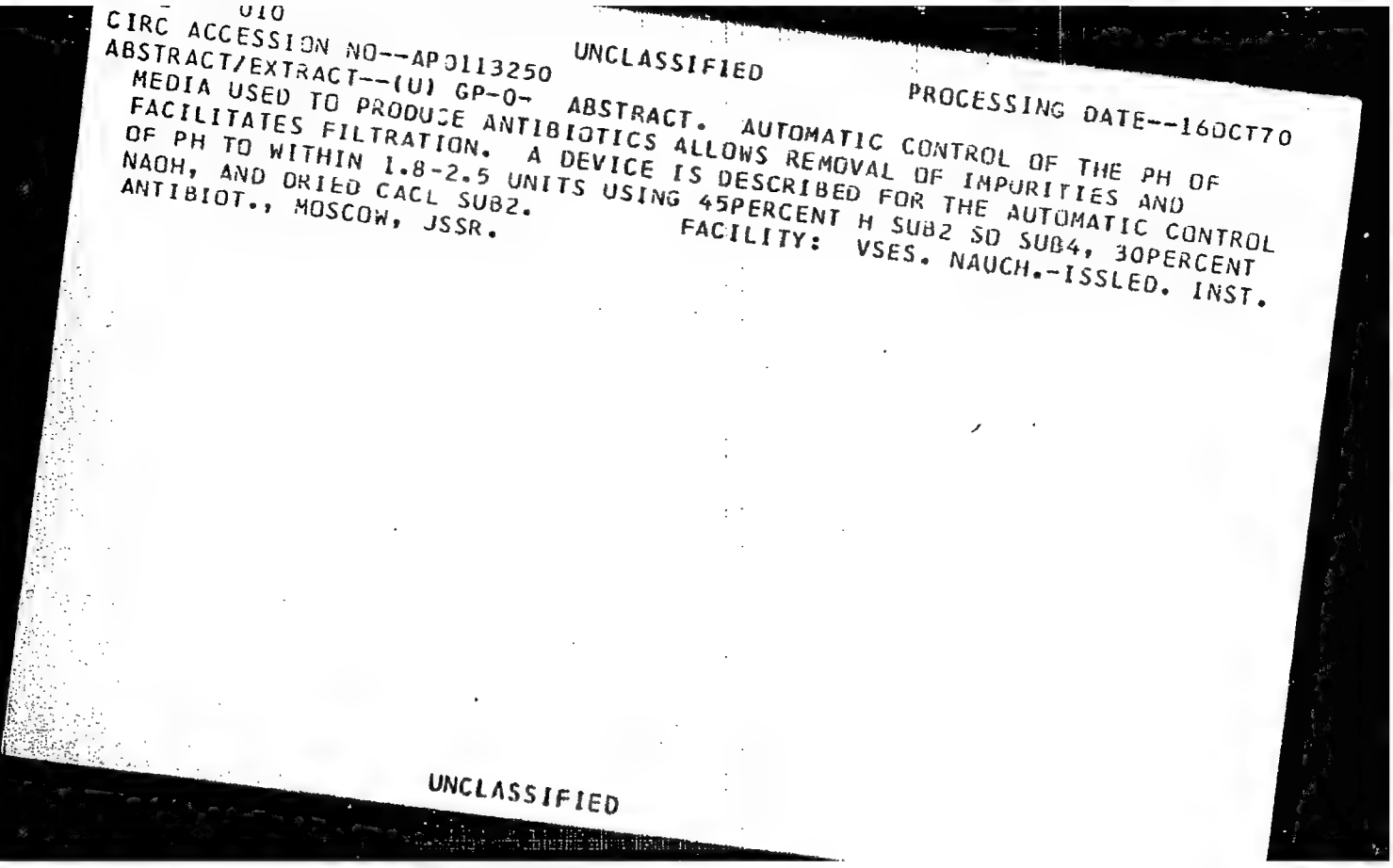

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CIRC ACCESSION NO--AP0113250 PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AUTOMATIC CONTROL OF THE PH OF MEDIA USED TO PRODUCE ANTIBIOTICS ALLOWS REMOVAL OF IMPURITIES AND FACILITATES FILTRATION. A DEVICE IS DESCRIBED FOR THE AUTOMATIC CONTROL OF PH TO WITHIN 1.8-2.5 UNITS USING 45PERCENT H SUB2 SO SUB4, 30PERCENT NAOH, AND DRIED CACL SUB2.

FACILITY: VSES. NAUCH.-ISSLED. INST. ANTIBIOT., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9"

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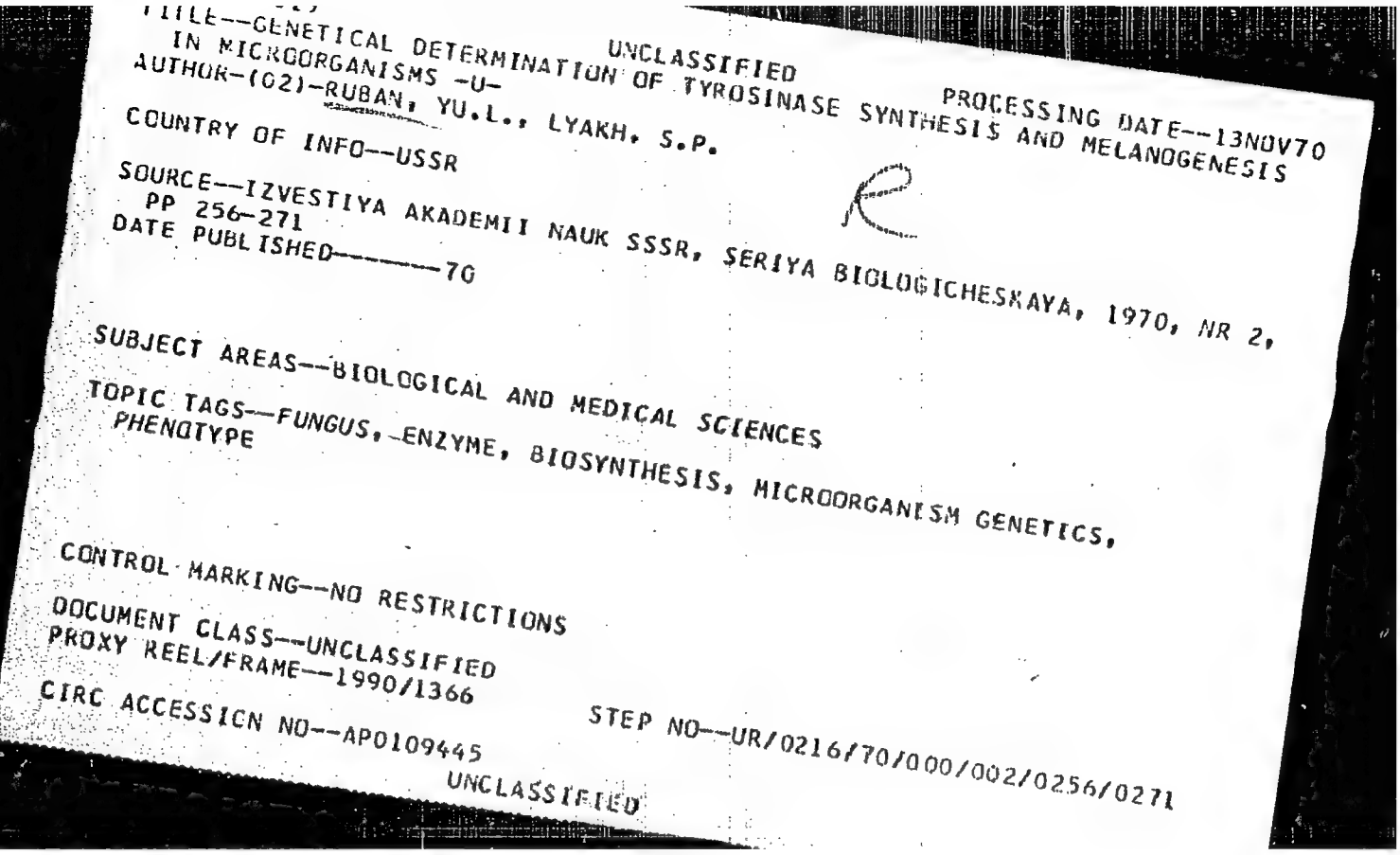

UNCLASSIFIED

TITLE--GENETICAL DETERMINATION OF TYROSINASE SYNTHESIS AND MELANOGENESIS IN MICROORGANISMS -U-

PROCESSING DATE--13NOV70

AUTHOR-(02)-RUBAN, YU.L., LYAKH, S.P.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 2, PP 256-271

DATE PUBLISHED----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FUNGUS, ENZYME, BIOSYNTHESIS, MICROORGANISM GENETICS, PHENOTYPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1366

CIRC ACCESSION NO--AP0109445

STEP NO--UR/0216/70/000/002/0256/0271

UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

2/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0109445

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MECHANISM OF TYROSINASE SYNTHESIS IN NEUROSPORA CRASSA AND ITS GENETICAL DETERMINATION AND REGULATION IS DISCUSSED THERE ARE, THE CONDITIONS CONSTITUTING BOTH THE CONSTITUTIVE AND INDUCTIVE ENZYME SYNTHESIS, PROTYROSINASE FORMATION AND ITS ACTIVATION, STRUCTURAL ENZYME POLYMORPHISM AND THE INTERCONVERSION PHENOMENON, THE SUPPOSED CORRELATION OF TYROSINASE SYNTHESIS WITH THE SEXUCAL DIFFERENTIATION OF THE FUNGUS. DATA ARE DISCUSSED BEARING ON POLYGENIC CONTROL OF TYROSINASE ACTIVITY AND DETERMINATION OF MELANINOGENESIS INTENSITY LEVEL IN GLOMERELLA CINGULATA. PIGMENTED PHENOTYPES OF ANTARCTIC BLACK YEASTS NADSONELLA NIGRA AND ITS MUTANTS ARE DESCRIBED. THE PROBABILITY OF CYTOPLASMIC INHERITANCE OF THE ABILITY OF TYROSINASE SYNTHESIS IN STREPTOMYCES SCABIES IS ANALYZED. FINALLY SOME PROBLEMS OF A GENERAL SIGNIFICANCE NATURE ARE DISCUSSED, WHICH WERE EITHER SOLVED OR ESTABLISHED IN THE COURSE OF THE INVESTIGATION OF THE MECHANISM OF MICROBIAL TYROSINASES SYNTHESIS AND ITS GENETIC CONTROL. FACILITY: INSTITUTE OF MICROBIOLOGY, ACADEMY OF SCIENCES USSR.

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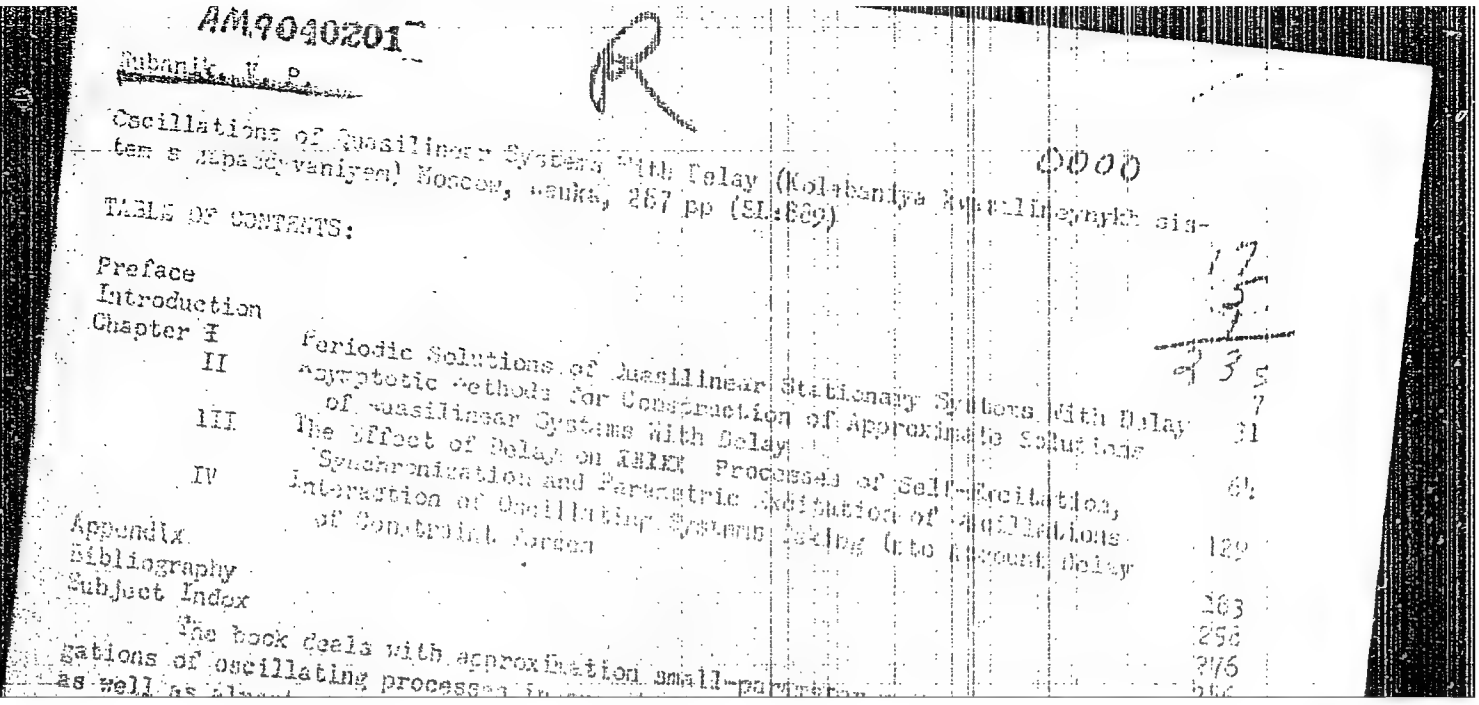

AM9040201

Rubanik, V. P.

Oscillations of Quasilinear Systems with Delay (Kolebaniya kvazilineynykh sistem s zapazdyvaniyem) Moscow, Nauka, 267 pp (Sl:$2.89)

TABLE OF CONTENTS:

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II Asymptotic Methods for Construction of Approximate Solutions of Quasilinear Systems With Delay 31
III The Effect of Delay on Rough Processes of Self-Excitation, Synchronization and Parametric Excitation of Oscillations 64
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Subject Index 276

The book deals with approximation small-parameter gations of oscillating processes in as well as

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

UDC 621.375.8

USSR

RUBINOV, A. N., BATYREV, V. A., EFENDIYEV, T. Sh.

"Problem of the Kinetics of the Generation Spectrum of Solutions of Organic Pigments"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol XVIII, No 5, 1973, pp 806-812

Abstract: A theoretical study was made of the kinetics of the generation spectrum of solutions of organic molecules in a resonator with nonselective mirrors. By solving the corresponding differential equation on a computer, the authors show that as a result of a decrease in the nonstationary losses at the initial points in time the generation frequency shifts into the low-frequency range. At later points in time a frequency shift takes place to the short-wave range which is connected with the accumulation of molecules in the triplet state and the occurrence of triplet-triplet absorption. The specific relations found for the generation frequency as a function of the pumping level and the resonator base obtained theoretically were checked experimentally.

The case of small pumpings was investigated. The pumping of the pigments was carried out by the second harmonic of a neodymium laser with modulated

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USSR UDC 621.375.9

KARPUSHKO, F. V., RUBANOV, A. S., SINITSYN, G. V.

"Generation of the Internal Modes and Its Effect on the Operation of a Tunable Ruby Laser"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol XVIII, No 5, 1973, pp 813-815

Abstract: Results are presented from studies involving the observation of the kinetics and the spectrum of the internal ring modes in the ruby elements of a laser. In lasers with water cooling of the active cores the generation threshold of the internal types of oscillations is comparable to the generation threshold in the external resonator. A study was made of the effect of the generation of ring modes on the parameters of the tunable ruby laser.

The threshold pumping curves are presented for various cases. The dispersion resonator similar to the one described by F. V. Karpusko, et al. [Opticheskiye kvantovyye generatory v sovremennoy tekhnike, Part 2, Leningrad, Znaniye Press, 36, 1971] was used in the experiment. The selector had a dispersion of 15 cm^{-1} and a halfwidth of the transmission circuit of ~ 0.05 cm^{-1}.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

UDC 534.232.46-8

GRANAT, Ye. G., RUBANOV, L. A., VIASOV, S. I.

"Device For Impregnation of Piezoceramic Transducer"

USSR Author's Certificate No 270003, filed 13 June 68, published 31 Aug 70 (from RZh--Elektronika i yeye primeneniye, No 3, March 1971, Abstract No 3A417P)

Translation: An improved procedure is proposed for impregnation of a piezoceramic transducer, which differs in the fact that a piezoceramic transducer subject to impregnation is used as an ultrasonic vibrator which produces ultrasonic vibrations in a bath with impregnating material. 1 ill. N.B.

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USSR

UDC: 621.391.2:519.27

KUZ'MIN, I. V., PODLESNYY, N. I., RUBANOV, V. G.

"One Method of Selecting the Optimum Set of Parameters for Testing to Determine the Operability of Complex Systems"

Radiolektronika Letatel'n. Apparatov [Aircraft Electronics - collection of works], No 3, Khar'kov Aviation Institute, 1971, pp28-33 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 3, 1972, Abstract No 3 A338, from the resume)

Translation: Problems of the selection of the optimal set of test parameters for determination of the operability of complex systems are studied. The method of selection of the number of test parameters is based on the criterion of maximum reliability of the test results. Cases of dependent and independent parameters are studied, with limitations placed on the testing time of the system tested. 1 figure; 5 tables; 6 biblio refs.

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Computers: Applications & Programming

USSR

UDC: 621.391.2:519.27

YEFIMOV, A. N., PODLESNYY, N. I., RUBANOV, V. G.

"Synthesis of an Optimal Algorithm for Interrogation of Sensors"

Radiolektronika Letatel'n. Apparatov [Aircraft Electronics - collection of works], No 3, Khar'kov Aviation Institute, 1971, pp 10-19 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 3, 1972, Abstract No 3 A370 from the resume)

Translation: The problem of optimization of the sequence of interrogation of sensors which are sources of primary information, represented by stable Gaussian random processes, is solved. It is shown that the sequence of interrogation of sensors is not neutral from the point of view of the quantity of information produced concerning the state of the object. The determining factors in this respect are the time of interrogation of the sensor and the probability characteristics of the random processes. The method of dynamic programming is used to find the optimal procedure (based on maximum information obtained) for interrogation of sensors. 3 figures; 5 references.

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1/2 007 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--EFFECT OF POTASSIUM CHLORIDE AND SULFATE ON THE YIELD OF BARLEY AND ON THE UPTAKE OF NUTRIENTS BY THE PLANTS -U-
AUTHOR-(02)-RUBANOV, I.S., BERESTOV, I.I.

R

COUNTRY OF INFO--USSR

SOURCE--AGROKHIMIYA 1970, (1), 44-9

DATE PUBLISHED--------70

SUBJECT AREAS--AGRICULTURE

TOPIC TAGS--POTASSIUM CHLORIDE, SULFATE, AMMONIUM COMPOUND, HYDROXIDE, CEREAL CROP, FERTILIZER APPLICATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/0328 STEP NO--UR/0485/70/000/001/0044/0049

CIRC ACCESSION NO--AP0113254
UNCLASSIFIED

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

2/2 007 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0113254

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN A LAB. EXPT., BARLEY PLANTS WERE FERTILIZED WITH NANO SUB3 OR NH SUB4 OH, SUPERPHOSPHATE, AND KCL OR K SUB2 SO SUB4. WHEN NANO SUB3 WAS THE N SOURCE, THE DRY WT. OF BARLEY IN VARIOUS DEVELOPMENTAL STAGES WAS GREATER THAN WHEN NH SUB4 OH WAS USED, AND THE EFFECTS OF KCL AND K SUB2 SO SUB4 WERE THE SAME ON GRAIN YIELD, ACCUMULATION OF PROTEIN AND ORG. P, AND ON THE UPTAKE OF ALL 3 ELEMENTS BY THE PLANTS. WHEN NH SUB4 OH WAS USED, K SUB2 SO SUB4 WAS MORE EFFECTIVE THAN KCL IN PROMOTING THE UPTAKE OF NUTRIENTS AND THE SYNTHESIS OF PROTEIN AND P-CONTG. ORG. SUBSTANCES BY THE PLANTS. FERTILIZATION WITH NH SUB4 OH INCREASED THE NEED OF PLANTS FOR K. BOTH K FERTILIZERS INCREASED THE AMT. OF NONEXCHANGEABLE K IN THE SOIL.

FACILITY: BELORUSS. NAUCH.-ISSLED. INST. ZEMLED., ZHODINO, USSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

UDC: 621.378.33

ORLOV, A. I., ORLOV, L. N., RUBANOV, V. S., Institute of Physics, Academy of Sciences of the BSSR

"Effect Which Imperfection of the Cavity Elements Has on the Characteristics of a Triangular Ring Laser With Ninety-Degree Faraday Rotator"

Minsk, Doklady Akademii Nauk BSSR, Vol 16, No 5, May 72, pp 410-414

Abstract: The paper examines the influence of imprecise angle setting of the linear phase plate, instability of the magnetic field of the Faraday cell, and the presence of phase anisotropy of the mirrors on frequency splitting, azimuth, and nature of polarization of the opposed waves in a ring laser with isotropic cavity containing a ninety-degree Faraday rotator, a ½-wave plate, and an arbitrary linear phase plate. It is shown that the actual errors in the elements of such a system do not distort its polarization-frequency characteristics.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

UDC 616.9-036.21]:681.3(476)

KARDASH, I. B., KLIMENKO, Ye. P., DROSDOVA-TIKHOMIROVA, A. A., POLIVODA, Z. M., RUBANOVA, F. G., IEPESHINSKAYA, I. V., RYTIK, P. G., and KNYSH, I. N., Ministry of Health Belorussian SSR, Central Institute of Epidemiology of the Ministry of Health USSR, Belorussian Institute of Epidemiology and Microbiology, and Belorussian Republic Sanitary Epidemiological Station

"Experience Gained in the Belorussian SSR During Introduction of a New Epidemiological Investigation Card Adapted for Processing on IBM Computer Minsk-22"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 12, 1972, pp 124-128

Abstract: A new IBM card with a detachable statistical stub, developed for epidemiological investigations at the Central Institute of Epidemiology, was tested in 1968-1970 in a feasibility study conducted throughout the Belorussian Republic. The project was a success not only because the IBM card is useful and convenient but also because the personnel at district and municipal epidemiological stations had received through advance training in how to fill in the cards and code the stubs. A control staff routinely examined the cards and corrected errors detected in a total of 3.1% of the stubs. Procedural improvements were introduced throughout the 3 year period as dictated by expediency. After each quarter-year, the stubs were checked at the local

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USSR

KARDASH, I. B., et al., Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 12, 1972, pp 124-128

stations and submitted to the municipal or oblast stations where they were recorded and checked again. Next, they were sent to the Belorrusian Institute of Epidemiology and Microbiology for the third check, and from there to the Computer Center of Belorussia's Central Statistical Administration where the data were transferred on perforated tapes and processed on the computer. The method yielded statistical charts with more accurate and detailed information than was ever available in the past. The method was approved by the Ministry of Health USSR and, in 1970, it was introduced on a permanent basis in epidemiological stations throughout the Belorussian SSR.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202710017-9

USSR

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UDC 616.9:681.142

TER-KARAPETYAN, A. Z., TEPLYAKOV, N. Ya., DROZDOVA, A. A., MONAKHOVA, S. I., and RUBANOVA, F. G., Central Scientific Research Institute of Epidemiology, Ministry of Health, USSR, and Belorussian Scientific Research Institute of Epidemiology and Microbiology

"Centralized Processing of Materials on Infectious Diseases"

Minsk, Zdravookhraneniye Belorussii, No 6, 1970, pp 66-67

Abstract: The organization of data requires centralized processing of properly classified information which may be suitable for machine processing. For this purpose, a new chart was prepared by the Central Institute of Epidemiology, designed for epidemiological studies and provided with a separate sheet containing 18 points considered essential for centralized processing. At the seminars attended by all epidemiologists, their aides, and all others working with infectious diseases, the various difficulties concerning the particular items in the new chart were resolved. Putting these new charts through the Minsk-22 computer proved accurate, reliable, and time-saving.

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Acc. Nr: AP0049966 Abstracting Service: CHEMICAL ABST. 5/70 R Ref. Code: 4A0051

95176k **Lasing and spectral characteristics of some polymethine dyes.** Bonch-Bruevich, A. M.; Zatsepina, N. N.; Razumova, T. K.; Rubanova, G. M.; Tupitsin, I. F.; Shuvalova, V. N. (USSR). *Opt. Spektrosk.* 1970, 28(1), 100–4 (Russ). Lasing was followed for a series of polymethine dyes on excitation by a ruby laser. The absorption and fluorescence band positions, stability, and the relative transformation coeffs. of the pumping energy are tabulated. For cryptocyanine (I), dicarbocyanine (II), and tricarbocyanine, the lasing characteristics are given. The quantum yields and fluorescence spectra are almost independent of the dielec. const. of the solvent; the quantum yields increase with the solvent viscosity. The transformation coeffs. of I and II in EtOH decrease with the no. of the excitation pulse, when the laser emits several pulses in a flash, proceeding in ~100 μsec. The degree of the decrease depends on the excess of the excitation power of the laser over the threshold of the generation excitation of the dye.
P. Adamek

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UDC 616-008.922.1.04-07:616-008.931:[577.158.47+577.8]-074

KHVATOVA, YE. M., RUBANOVA, N. A., and ZHILINA, I. A., Chair of Biochemistry, Gorkiy Medical Institute

"The Activity of Monoaminooxidase and Respiratory Chain Enzymes in Acute Hypoxia"

Moscow, Voprosy Meditsinskoy Khimii, Vol 19, No 1, Jan/Feb 73, pp 3-5

Abstract: In rats suffering from circulatory hypoxia of the brain induced by ligation of one common carotid artery, the activity of monoaminooxidase (MAO) in brain mitochondria decreases by 29% as compared with control animals (sham surgery) and by 44% as compared with intact animals, and this reduction persists for at least 4 hrs. At the same time, the activity of succinate dehydrogenase (SD) and NADH-dehydrogenase (NADH-D) falls by about 23% in sham-operated controls but returns to normal in the experimental animals. In rabbits suffering from hypoxic hypoxia (air pressure in barochamber reduced to 310 mm Hg), NADH-D activity in brain mitochondria remains unchanged for 1 hr but decreases by a factor of 2 in 4 hrs. At the same time, SD activity increases by 22% and then returns to normal, while MAO activity first falls by 50% and then rises toward the normal level. Thus, hypoxia induces significant changes in respiratory enzyme activity, and the almost mirror-image changes in monoaminooxidase and succinate dehydrogenase confirm the concept of a mutual regulatory effect exerted by these two enzymes.

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UDC 621.791.79:669.7.014

AVRAMENKO, V. I., Engineer, LEBEDEV, B. F., Doctor of Technical Sciences, and BOZHKO, V. I., Engineer, Institute of Electric Welding imeni Ye. O. Paton; and RUBANOVICH, B. B., Engineer, Stal'konstruktsiya Trust

"Some Means of Increasing Electroslag Welding Productivity"

Moscow, Svarochnoye Proizvodstvo, No 10, 1973, pp 16-17

Abstract: Reducing the gap in a butt joint while simultaneously increasing the feed rate of electrode wire is the most advantageous and simple method of increasing electroslag welding productivity, and work has been done in this area at the Institute of Electric Welding imeni Ye. O. Paton, where samples of low-alloy steels 09G2S and 10G2S were welded using wire Sv-10G2 and AN-48 flux. An empirical formula was established making it possible to determine the critical rate of electrode wire feed during electroslag welding which is based on the cross sectional area of the gap and electrode wire diameter. Gaps of 16, 18, 20, 20, 20, and 20 mm were determined for steel thicknesses of 20, 24, 30, 36, 40, and 50 mm. Experiments showed that gaps 20±2 mm were optimum for steel thicknesses of 30-50 mm. The optimum electrode diameter was 2-3 mm and optimum welding wire feed rate--40-50 m/hr. 1 figure, 2 bibliographic references.

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UDC 531.36

MOROZOV, V. M., RUBANOVSKIY, V. N., RUMYANTSEV, V. V., SAMSONOV, V. A., Moscow

"Bifurcation and Stability of the Steady-State Movements of Complex Mechanical Systems"

Moscow, Prikladnaya Matematika i Mekhanika, Vol 37, No 3, 1973, pp 387-399

Abstract: In many cases it is possible to simulate modern equipment such as rockets, spacecraft, gyros, and so on by mechanical systems comprising absolutely solid-states and particles and the deformable (liquid and elastic) bodies connected with them. A study is made of the steady-state movements of complex systems -- mechanical systems containing subsystems with a finite number of degrees of freedom and elements with distributed parameters, that is, continuous media. The steady-state movements correspond to the stationary values of the potential energy V or variable potential energy W of the system. The problem of stability of the steady-state movements is reduced to investigating the nature of the extremum of the potential energy V or W. Minimum potential energy corresponds to stable movement. The stability (instability) conditions of the steady-state movements can be obtained as conditions of defined positiveness (sign variability together with certain additional conditions) of the secondary variation of the potential energy δ^2V or δ^2W in many important cases. These general results are applied to the solution of a number of specific problems

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MOROZOV, V. M., ET AL., Prikladnaya Matematika i Mekhanika, Vol 37, No 3, 1973, pp 387-399

of the stability of steady-state movements of complex systems, and the conditions of stability of the movement of a solid-state with liquid and elastic parts in different force fields are discussed.

Thus, the investigation includes complex systems constrained by holonomic relations, movement of a solid-state having a cavity partially filled with a liquid of density ρ the surface tension of which is negligible around a stationary point O, the construction of a complete picture of the distribution of the positions of equilibrium of a complex system, their evolution and bifurcation on variation of the system parameters, the problem of stability of uniform vertical rotation around a stationary point of a solid-state with a thin, rectilinear, nonextensible elastic rod in a uniform field of gravitational force rigidly fastened to it, and the movement of a solid-state in a central newtonian force field bearing thin or thin-walled inextensible elastic rods each of which has 2 planes of symmetry.

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